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DE LA

SOCIÉTÉ ROYALE

DU

CANADA

SECONDE SERIE—TOME V

SÉANCE DE MAI 1899

EN VENTE CHEZ
JAS. HOPE ET FILS, OTTAWA ; LA CIE COPP-CLARK (LIMITÉE), TORONTO

1899

PROCEEDINGS

AND

TRANSACTIONS

OF THE

ROYAL SOCIETY

OF

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MEETING OF MAY, 1899

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ERRATA.

In Proceedings, p. XVI., for "Rev. Mr. Forneret," read "Rev. Mr. Forneri."

For V., in Section I., p. 87, read *VI.* as number of paper.

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1897-'98	L'honorable Dr. F. G. Marchand
1898-'99	T. C. Keefer, C.M.G.
1899-1900	Rev. Professor Clark, D.C.L.

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ROYAL SOCIETY OF CANADA.

PROCEEDINGS FOR 1899.

EIGHTEENTH GENERAL MEETING.

SESSION I. (May 23rd.)

The Royal Society of Canada held its eighteenth general meeting in the Assembly Hall of the Normal School at Ottawa, on Tuesday, May 23rd. The President, Thomas C. Keefer, Esq., C. M. G., C. E., took the chair at 10 o'clock, a. m., and formally called the meeting to order.

The Honorary Secretary, Sir John Bourinot, K.C.M.G., read the list of members, and the following gentlemen answered to their names :

List of Fellows Present.

President, T. C. Keefer.
Honorary Secretary, Sir John Bourinot.
Honorary Treasurer, Dr. Fletcher.

Section I.—A. D. DeCelles, Dr. Frechette, Abbé Gosselin, J. E. Roy, Joseph Royal, B. Sulte, Mgr. Tanguay.

Section II.—Dr. Brymner, W. W. Campbell, Rev. Professor Clark, Dr. S. E. Dawson, Hon. Sir J. D. Edgar, Principal Grant, Archbishop O'Brien, A. Harvey, Dr. Longley, Dr. McCabe.

Section III.—Professor Cox, Professor Dupuis, E. Deville, Sir S. Fleming, Mgr. Hamel, Dr. Hoffmann, Dr. Johnson, T. Macfarlane, Professor McLeod, Professor Ruttan.

Section IV.—Professor Bailey, Dr. R. Bell, Dr. Burgess, Dr. G. M. Dawson, Dr. Ells, Sir James Grant, President Loudon, W. H. Harrington, Dr. Saunders, J. F. Whiteaves.

REPORT OF COUNCIL.

The Council of the Royal Society of Canada have the honour to present their seventeenth Report, as follows :

1. The New Governor-General Accepts the Honorary Presidency.

During the month of April the President waited upon the present Governor-General the Earl of Minto, and formally asked him to become Honorary President of the society, in accordance with the constitution. His Excellency was pleased to accept the position held for so many years to the advantage of the society by his distinguished predecessors, the Marquess of Lorne, the Marquess of Lansdowne, Lord Stanley, and the Earl of Aberdeen.

2. Printing of Transactions.

The fourth volume of the new series has been printed and bound earlier than usual this spring, and is now in the course of distribution. In addition to 125 pages of Minutes of Proceedings, it contains 28 papers in the four sections, making in the aggregate 785 pages, or about 220 less than the exceptionally large volume of the new series, which contained the elaborate account of the celebration at Halifax in honour of John Cabot. Authors have received, free of all charges, 3,200 copies of their papers in the ordinary pamphlet form. The volume contains a considerable number of maps, diagrams and illustrations—47 in all—chiefly in connection with the President's address on the St. Lawrence navigation. On this account the volume has been more expensive than the Printing Committee expected. The illustrations, as usual, have been done at the cheapest possible rate, under the supervision of Dr. Dawson, Queen's Printer, who has always kept carefully in view excellence in execution. The printing accounts have been carefully audited by the officials of the Government Printing Bureau, to the decided advantage of the society.

The following is a statement of the financial condition of the society to the date of meeting :

Publishing Accounts.

Montreal, May 25th, 1899.

Royal Society of Canada,

To Gazette Printing Co., *Dr.*

Balance due Co. on May 17th, 1898	$ 988 00
Account for printing, paper, editorial and proof-reading, press-work, corrections, etc	2,690 10
	$ 3,678 10

Cr.

1898		
May 31—By cash	$ 988 00	
" —Overcharge on paper for 1898	187 97	
Sept. 13—By cash	750 00	
Nov. 31— "	750 00	
1899		
Mch 20— "	800 00	
May 9— "	202 13	
		$ 3,678 10

Binding and Distributing Account.

To the Manufacturing Stationers' Co., Montreal.

Dr.

Account rendered July 20th, 1898, including Canada, etc., distribution from Ottawa	$ 1,149 84

Cr.

1898		
June 6—By cash	$ 301 95	
Aug. 24— "	847 89	
		$ 1,149 84

General Financial Statement of Royal Society from May 17th, 1898, until May 22nd, 1899.

Dr.

By cash on hand (Hon. Secretary) May 17th, 1898	$ 1,387 43
Government grant for 1898–99	5,000 00
	$ 6,387 43

General Financial Statement Royal Society—Continued.

1898	*Cr.*	
May 31—To	Gazette Co., balance for printing, paper, etc.....$	988 00
" — "	Paper, &c.....	6 76
" — "	Taylor & Gilbert (printing).....	28 75
" — "	Ottawa Citizen (printing).....	10 00
" — "	Ottawa Free Press (printing).....	7 50
" — "	Ottawa Journal (printing).....	7 50
" — "	W. C. Bowles (clerical)	50 00
June 31— "	Manufacturing Stationers' Co. (binding and part distribution).....	301 98
Aug. 14— "	*Ibid* (balance and Canada distribution).....	847 89
Sept. 13— "	Gazette Printing Co. (printing, etc.).....	750 00
Oct. 24— "	I. Allen Jack (drawings).....	10 00
" — "	G. Cox (engraving stationery).....	47 50
" — "	R. P. King (engrossing address to Governor-General)	20 00
" — "	A. G. Doughty (illustrations).....	25 00
" — "	Grip Printing Co. (*ibid*).....	209 85
" — "	L. H. S. Pereira (*ibid*).....	100 00
" — "	S. T. Ami (proof-reading).....	30 00
Nov. 31— "	Gazette Printing Co. (printing)	750 00
Dec. 20— "	A. Frechette (proof-reading).....	20 00
" — "	S. T. Ami (*ibid*)	20 00
" — "	Montreal Lithographing Co. (illustrations).....	360 00
" — "	Toronto Engraving Co. (*ibid*)	8 50
" — "	Dominion Express Co. (expressage of illustrations).....	5 40
1899		
Mar. 20— "	Gazette Printing Co. (printing)	800 00
" — "	H. W. Bryant (books for illustrations).....	3 00
" — "	F. P. Harper (*ibid*).....	8 00
April 5— "	Professor P. Cox (aid for researches for society)	25 00
" — "	G. W. Taylor (*ibid*).....	25 00
" — "	Dr. Matthew (*ibid*).....	50 00
May 9— "	Gazette Printing Co. (balance on Vol. 4, N. S.)...	202 13
" — "	A. Frechette (proof-reading).....	30 00
" 10— "	S. T. Ami (*ibid*)	50 00
" — "	Toronto Lithographing Co. (illustrations).....	15 50
" — "	F. P. Harper (*ibid*).....	6 00
" 22— "	Cash in hands of Hon. Secretary at this date.....	568 17
		$6,387 43

Amount of subscriptions in Treasurer's hands to 22nd May, 1899, $203.72.

3. Aid to Scientific Studies and Investigations.

In accordance with the recommendation of the Fourth Section, small sums of money have been granted during the past year out of the available funds of the society to Dr. G. F. Matthew towards the continuation of his researches in the Cambrian faunas of Newfoundland ; to Dr. Philip Cox for the continuance of his investigations on the fishes of New Brunswick and Eastern Quebec, and to the Rev. G. W. Taylor, of Nanaimo, for investigations in the Mollusca of the Pacific Coast. This year the Council can devote the sum of fifty dollars to the Third Section for such scientific researches as they may recommend.

4. Gold Medals for Best Historical Work.

It is proposed to give a small sum to the first and second sections of French and English Literature for the purchase of two gold medals—one to each section—which can be given during the next two years to the best book or monograph, in French and English, on some period or epoch of Canadian history. The work must be distinguished for original research and literary finish, and is not to be submitted to the society in manuscript, but may appear either in print in the Transactions of the society or as published in Canada, or any other country. It will be left to each section to appoint a committee of two or three Fellows to read such histories as may be printed within the time mentioned and submit their award to the Council of the society, who will be bound by their decision and order the medal accordingly.

The medal will contain on one side the seal of the society, and on the other side the name of the winner and the title of his successful work. In offering this medal the society hope to show their appreciation of the study of Canadian history, to which so many persons have of late years ably devoted themselves. The prize will be given to the best book or monograph, whether the author is or is not a member of the society. All that is expected is that each author or publisher will send at least one copy of his book as soon as it is printed, to the Honorary Secretary, who will submit it to the members of the French and English sections, chosen to adjudge the medal to the best historical work.

5. Design of Seal for the Society.

For some years past efforts have been made without success to obtain a design of a seal that would be in all respects suitable for the Royal Society. Mr. Arthur G. Doughty, who gave the outline of the design for the beautiful address to the Earl and Countess of Aberdeen, has submitted to the Honorary Secretary a sketch, which seems in every

way appropriate, and which, according to Dr. Dawson, the Queen's Printer, can be reduced in artistic style to a small scale. The Royal Arms—which we are entitled to use—properly form the centre of the design, and are encircled by the Arms of the Canadian Provinces, so many illustrations of the foundation of the society by the representative of the Crown, and its essentially national or Dominion character. The Imperial idea is also conveyed by the fact that the points of the seven provinces converge towards the motherland, represented by the Royal Arms. The single maple leaves between the divisions of the provinces form in the whole a wreath, and are appropriately emblematic of the federal union. The Latin motto *Sapientia gubernator navem torquet non valentia*, taken from Titinnius, also fitly represents the object of a scientific and literary association. We recommend, therefore, the adoption of the seal, and its use in all papers, printed or manuscript, by the proper officers of the society.

6. Popular Lectures.

In accordance with the practice of some years past, two evenings of the present meeting will be devoted to the popular treatment of scientific and literary subjects. Some well known Canadian writers of prose and verse will give readings from their own work, and Dr. Howard of Washington, the distinguished entomologist, will deliver an address on Insect

Life, with vivid illustrations from his own special plates. Similar lectures and readings have heretofore attracted large audiences, and created a popular interest in the general work of the society.

7. Bibliography.

The Editor of the Transactions proposes in the autumn of this year to go on with the Bibliography of the Fellows of the society. So far members have sent in very few additions to the lists published in volume XII of the old series. All that is necessary for them to do is to refer to that volume and follow the plan therein set forth. All manuscript should be at least legibly written, when it cannot be typewritten. If this plan is not followed the work of the editor is more than doubled. When possible it would ensure accuracy if each author would take the trouble to write out his bibliography in full to the latest possible date. Authors can add other titles when the proofs are received—say in the month of January next. In this way the work will be complete to the close of the present year.

8. Proposed Addition to the Fellowships of the Society.

At the request of the Honorary Secretary, the Council place before the society the following communication which he has addressed to us all on a matter affecting the usefulness of the whole body:

"Gentlemen,

"On several occasions for two or three years, in the course of conversation with Fellows of the society and persons outside of its ranks, it has been suggested to me that the present time seems opportune for increasing the number of members in each section, and probably in this way giving an additional stimulus to the work of the society without in the least degree lowering that basis of qualification on which our membership has always rested. The society commenced with a total membership of eighty, or twenty in each section—subsequently increased to one hundred, and twenty-five, respectively. The third section has never filled up its ranks to the allotted number, and the society has so far never exceeded a membership of ninety Fellows on that account and by reason unhappily of one or more deaths every year. Seventeen years have passed since the foundation of the society by the Marquess of Lorne with a limited membership, but during that period the number of persons who are actively engaged in science and literature has steadily increased, as a consequence not only of the additions made from time to time to the staff of several universities, but also of the greater interest generally taken in scientific and literary studies. Under such circumstances the question arises, whether the society should not now be enlarged in order

to meet the conditions of this increasing intellectual development. As it is now, a considerable number of persons are shut out of the society on account of the few opportunities annually offered for their admission. At the present time there are two vacancies in the second section, and in considering how best to fill them the members of the section are much embarrassed by the difficulty of making a selection out of a number of names of equal merit—such names as W. McLennan, Dr. G. Bryce, D. Campbell Scott, Dr. Drummond, Rev. Frederick G. Scott, W. D. Lighthall, W. A. Fraser, W. Hill-Tout and others who are winning a high reputation at home and abroad for their work in prose and verse. I may also mention a well known fact that for several years past a difficulty has existed in the third section on account of a rivalry between some branches of scientific labour with the result that vacancies cannot be filled up under the rules. If the total membership of the society were enlarged to a hundred and twenty, or thirty Fellows in each section, it would be doubtless possible to stop this rivalry and at the same time give admission to a number of gentlemen who ought to have an opportunity of co-operating in the work of the society, but who otherwise must remain probably for many years outside. I need not assure you that I have no feeling in this matter except a desire to promote the usefulness of the society and bring it immediately into practical touch with the ablest workers in science and literature through the length and breadth of the Dominion. Of course in making this increase of membership every care should be taken not to lower the degree of qualification now required from all members. It is necessary, however, to remember that this society has been established and has been always conducted, not in a spirit of exclusiveness, but with the commendable purpose of giving an opportunity to the ablest scientific and literary workers of the Dominion to meet together in profitable discussion, to publish annually the result of their investigations and studies, and give every possible information to countries outside of Canada with respect to Canadian literature and science. The Earl of Derby, when Governor-General of Canada, in the course of his last address to the society, very aptly said that the 'Royal Society had done good work, especially by uniting those who are scattered by distance, and who find in the meetings of the society a convenient opportunity of coming together for the exchange of ideas.'

"It is assuredly one of our principal objects to bring together as large a number of scientific and literary men as is possible in this young country. We should certainly take some effective measures to bring together a larger number of literary and scientific students and writers. I may also here observe that in the election of new members the probability of attendance should be always anxiously considered. We have now on our list members who have never contributed papers, attended or otherwise promoted the objects of the society. Membership is not intended

to be an empty honour, but means primarily scientific and literary work. I shall not, however, dwell at any greater length on this subject, but leave it entirely in your hands. I hope that you will endeavour to come to such a conclusion as will best, in your honest opinion, promote the practical usefulness of the society, and give it greater strength in connection with the intellectual development of this young nation.

"J. G. BOURINOT."

9. Associated Societies.

The customary invitations to attend the present meeting, and report on the scientific and literary work of the year, were sent to the following Canadian societies, who have heretofore co-operated with the Royal Society:

Society.	Place.	Delegate.
Natural History Society	Montreal	Prof. T. Wesley Mills.
Numismatic and Antiquarian Society	do	W. D. Lighthall.
Microscopical Society	do	
Société Historique	do	
Cercle Littéraire de Montréal	do	Mme. Marc Sauvalle.
Literary and Historical Society	Quebec	P. B. Casgrain.
Geographical Society	do	M. Baillargé.
Institut Canadien	do	
Literary and Scientific Society	Ottawa	Prof. Prince.
Field Naturalists' Club	do	Dr. Ami.
Hamilton Association	Hamilton	Dr. Fletcher.
Entomological Society of Ontario	London	Rev. Dr. Fyles.
Canadian Institute	Toronto	Sir S. Fleming.
Natural History Society of St. John, N.B.	St. John	Dr. Ellis, M.P.
N. S. Institute of Natural Science	Halifax	Dr. Fletcher.
Historical Society of Nova Scotia	do	Dr. Longley.
Natural History Society of B. C.	Victoria, B.C.	
Wentworth Pioneer and Historical Society	Hamilton, Ont.	
Elgin Historical and Scientific Society	St. Thomas, Ont.	Sir J. Bourinot.
Historical Society of Manitoba	Winnipeg	
Botanical Club of Canada	Halifax, N.S.	Dr. Fletcher.
American Folk-lore Society	Montreal	
Historical Society	Kingston	
Astronomical and Physical Society	Toronto	Arthur Harvey.
Lundy's Lane Historical Society	Niagara Falls South.	S. D. Scott.
New Brunswick Historical Society	St. John, N.B.	
Historical Society of Ontario	Toronto	B. Sulte.
Women's Historical Society of Toronto.	do	Lady Edgar.
Niagara Historical Society	Niagara, Ont.	Sir J. Bourinot.
United Empire Loyalists' Association of Ontario	Toronto	Sir J. Bourinot.

The Council have noticed with much pleasure the addition within the past year of two societies, one scientific and the other historical, to the list of Canadian societies, as given above. One is the Natural History Association of Miramichi, in New Brunswick, which has already printed a short record of its proceedings. The women of Ottawa have also established a local Society of History, and have held a number of meetings in which papers of considerable interest and merit have been read by local students. We have much pleasure in recommending that these two societies be added to the list of associated societies who already take part in our work.

10. Canvassing for Membership.

The Honorary Secretary has also called our attention to what seems an absence of good taste on the part of some persons who wish from time to time to become connected with this society, and that is in pressing their personal claims with great pertinacity on the members of the section to which they have aspirations. It is somewhat interesting and certainly satisfactory to hear that claims are never urged by literary or scientific men of such distinction as would bring their names in the natural order of things before the society in case of vacancies. The Council feel that it is quite sufficient to call attention to a matter which probably brings its own remedy with it, and that is the reluctance of members of a section to listen to claims pressed with so little regard to the dignity or self respect of an aspirant to fellowship.

11. The Government and the Plains of Abraham.

Much interest has been felt by many patriotic Canadians in the announcement that ere long the famous battlefield, on which Wolfe is understood generally to have won Canada for England, and laid the foundation for the present Dominion, must be disposed of and probably sold and divided up into building lots, unless the Government of Canada or of Quebec intervene, and prevent such a desecration of the most famous historic ground of the country. It is encouraging to understand, from a statement recently made by the Premier in the House of Commons, that the Government have made a proposition to the owners—the Ursulines of Quebec—for the purchase of the property. We cannot suppose for one moment that this famous religious body, associated with the history of the province from its very commencement, will not respond sympathetically to the appeal made to them from all parts of Canada, or fail to dispose of it at such a reasonable rate as will justify the Government in buying it for the Canadian people. The following letter will show the interest that is being excited in all parts of the Empire by the news that

there is soon danger that this historic field, or whatever remains of the original plains, may pass from the control of the people of the Dominion, in whose possession as a national park it should remain to all time :

THE NATIONAL TRUST

For Places of Historic Interest or Natural Beauty, 1 Great College Street, Westminster, London, S.W.

President—His Grace the Duke of Westminster, K.G.
Vice-President—H.R.H. Princess Louise, Marchioness of Lorne.
Chairman of Executive Committee—Sir Robert Hunter.
Treasurer—Miss Harriot Yorke.
Honorary Secretary—The Rev. Canon Rawnsley.
Secretary—Hugh Blackiston, B.A.
Bankers—The National Provincial Bank of England, Limited, 208 and 209, Piccadilly, W.

17th April, 1899.

Sir,—

I have no doubt that the proposal to build over the Plains of Abraham has come under the notice of the Royal Society of Canada. On behalf of the National Trust I venture to express a hope that energetic action will be taken to prevent the desecration of this historic site, and to assure you that such action will receive the warmest sympathy from the members of that Trust, and the support of a large body of public opinion in England.

I have the honour to remain, Sir,
Your obedient servant,
Robert Hunter,
Chairman of the Executive Committee.

Sir John G. Bourinot, K.C.M.G., LL.D., D.C.L., D.L.,
Dominion House of Commons,
Ottawa, Canada.

12. National Monuments.

Perhaps among the signs of the mental growth of this young Canadian nation, there is none more inspiriting than the desire that is gaining strength from year to year to illustrate the country's history by memorials of famous men and events. At Lundy's Lane, Chrysler's Farm, and at Chateauguay, monuments have been erected by the Government of the Dominion to recall the valour and patriotism of the Canadian Militia, who combined with the British regular forces to drive the invader from the land. One of the notable architectural features of the Legislative

Building at Quebec is the representation of notable figures in the annals of the French province. The tall shaft that rises in what was once the Governor's garden, in honour of Montcalm and Wolfe on the noble terrace of the ancient capital will always be a symbol of the unity of the two races who are labouring to build up this new Dominion.

13. Monument to Champlain.

An important event in the history of the past, was marked by the unveiling of a monument at Quebec by His Excellency the Earl of Aberdeen, on the 21st of September, 1898, to Samuel de Champlain, the founder of the city.

There is no more interesting figure in Canadian affairs than Champlain, for so far as it is possible for a man, he gave to his work a lasting impression of the dominant characteristics of the age in which he lived.

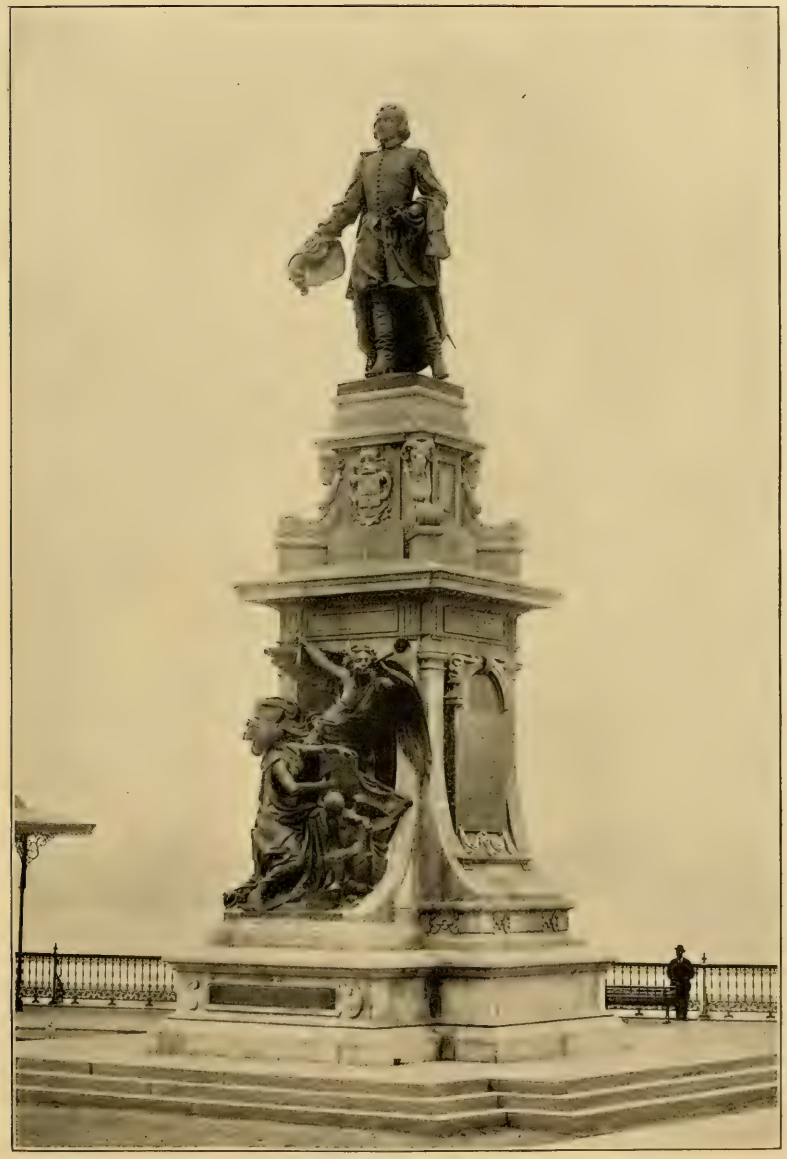
The erection of a monument to a founder, under circumstances similar to those attending the foundation of the city of Quebec, is but an act of justice at the hands of posterity. Happily, in the case of Champlain, it is more than a monument to a founder. It is the tribute of a grateful people to a man of letters, to a soldier, to a navigator, to a man of noble qualities, and also to the first governor of the country.

Quebec possesses to-day an imposing monument which is an adornment to the city, and a fitting memorial of the life and achievements of a noble man.

On a marble slab the career of Champlain is tersely outlined in the following words :—

Samuel de Champlain
Né a Brouage en Saintonge, vers 1567
Servit a l'armée sous Henri IV.
En qualité de Maréchal de logis ;
Explora les Indes Occidentales de 1599 a 1601
L'Acadie de 1604 a 1607,
Fonda Québec en 1608 ;
Découvrit le pays des grands lacs ;
Commanda plusieurs expéditions
Contre les Iroquois, de 1609 a 1615 ;
Fut successivement lieutenant-gouverneur
Et Gouverneur de la Nouvelle-France
Et mourut à Québec le 25 décembre
1635

From an historical standpoint, the choice of a site for the monument was wisely made, because it is within the area of Champlain's fort, the scene of so many of the stirring events of his life, and also conse-



MONUMENT TO CHAMPLAIN

crated as the place of his death, and at the same time it occupies the most commanding position of the city. A combination of circumstances rendered the ceremony particularly impressive, and instead of a civic or local function it assumed an international aspect.

The presence of His Excellency the latest English Governor, dedicating a monument to the first French Governor, was in itself significant, and an act which emphasized more strongly than words, the nature of the bond of unity existing between French Canada and the Empire. The sympathy of England was also shown by the presence of two of Her Majesty's ships entering port under the command of Admiral Sir John Fisher to participate in the festivities.

The Republic of France was represented by her official envoy, and the Republic of America by the officers and men of the United States ship Marblehead, and also by the members of the International Commission then in session at Quebec.

It is also a fact worthy of note that the address delivered by the Hon. Alex. Chauveau, and the speeches made respectively by His Excellency the Earl of Aberdeen, Monsieur Kleczkowski, His Honour the Lieutenant-Governor, Sir Wilfrid Laurier, the Hon. Mr. Marchand, the Hon. Judge Routhier and the Hon. H. Thomas Duffy, contributed to make the celebration in Champlain's honour, a day to be remembered not only in the province of Quebec, but throughout the Dominion of Canada.

The address to Lord Aberdeen was written in French and English, but at his request it was not repeated in English, and with the delicacy which characterized all his actions His Excellency replied to the address in French.

Let us hope that year by year we shall see other noteworthy examples of the spirit of patriotism that has already raised in public places of our cities monuments to Champlain, Sir George Cartier, Sir John Macdonald and the Hon. George Brown. Nova Scotia could well honour the memory of the father of responsible government, Joseph Howe, poet, printer and politician, and this mention of his name recalls the fact that he was the son of one of those Loyalists who left New England for the sake of a United Empire, and whose memory ought to be perpetuated by the erection of a national memorial. The people of St. John, the most important place they founded, would only do justice to their deeply interesting historic past if they would erect a building which would be at once a home for Literature and Science, and a safe storehouse for the many valuable manuscripts and relics which could be collected in all parts of the province, to illustrate its early history. An effort has been made, but so far without success, by the historical socie-

ties of the Niagara district to raise a cairn or monument of some kind to commemorate the landing of the same loyal people on the banks of the famous river. A movement is also on foot to erect a monument to Laura Secord, the daughter of a Loyalist and the wife of another. It is an encouraging fact that the women of Canada who are pursuing historical researches with so much earnestness and profit, are taking an active part in this national movement for the revival of the history of our Past and the erection of tablets and monuments in honour of our distinguished Dead. How much can be achieved by the energy of one man, can be seen in the old historic township of Adolphustown, on the beautiful Bay of Quinte, where the Reverend Mr. Forneret, after many years of effort, has succeeded in erecting a pretty memorial church, in which numerous tablets have been placed by the descendants of the Loyalist Makers of British Canada.

14. One Monument that should never be raised in Canada.

The attempt that has been made within a year or two to obtain permission to place in the city of Quebec a monument in honour of Brigadier-General Montgomery has not been renewed in the face of the determined opposition that it has properly evoked from all true Canadians, especially from the women of the Dominion. We find nothing in Canadian history or in the character or services of this soldier to justify our encouragement of the proposed memorial. On the contrary, it would be a positive desecration of Canadian soil, and a justification of treachery on the part of an English soldier who had even served with Wolfe, and of the invasion of Canada by the forces of a Continental Congress who had only a short time previously insulted the religion of the French-Canadians in an address to the British people. French and English Canadians are animated by the kindliest sentiments towards their American neighbours, by the most sincere desire to have the closest possible commercial and social relations with them, but such sentiments and relations must be governed at all times by a sense of national respect and dignity and not by forgetting what they owe to that memorable Past, in which they remained faithful to the Crown and Empire—that past from which has sprung the most loyal dominion of the Empire.

If another national monument should soon be erected in Quebec, it ought to be in honour of Sir Guy Carleton—Lord Dorchester—who saved Quebec from Montgomery and Arnold, drove the invaders from Canada, and exercised his powerful influence in doing full justice to the French Canadians when the Quebec Act—the charter of French Canadian civil and religious rights—was in contemplation by the British Government during the years he was Governor-General of Canada.

15. National Museum.

We understand that some practical steps are being at last taken towards the preparation of plans for the construction of a National Museum in this city. It is to be hoped that the architecture of this building will be conspicuous for its artistic beauty, worthy of this bright era in our country's material development. Canada possesses relatively few public buildings or churches which can be considered remarkable examples of original design, though such new structures as the new Court House and City Hall in Toronto and the Government building in Victoria are well worthy of the cities in which they form the most interesting architectural features. It seems to the Council that the Government of the Dominion have now an admirable opportunity of taking a practical step towards giving the Washington of the North some of the aspects of the Washington of the South, where the Premier and other members of the Cabinet have had such abundant opportunity of late of studying the most notable characteristics. The architects of the Dominion should be asked to compete for a design for this important national work. Such a competition would stimulate the genius and enterprise of our ambitious and able architects and probably result in giving us a work worthy of the country.

16. The Decoration of our National Buildings.

We hope to see in our most notable public buildings such mural decorations as have been very recently executed by the eminent Canadian artist, Mr. G. A. Reid, R.C.A., for the main hall of the new municipal buildings in the city of Toronto. These paintings are the gift of the artist to the city, and illustrate the heroic work of the pioneers of Canada, to whom an appropriate reference is made by the following motto :

> "Hail to the Pioneers, their homes and deeds
> Remembered and forgotten we honor here."

The Royal Society fully sympathize with the hope expressed by the Toronto Guild of Civic Art, in officially presenting Mr. Reid's beautiful gift to the city, that "these fine decorations may prove to be but the first of a series of historical memorials of this nature, illustrating the progress of our country which may be placed in this and other buildings. They beg to record their conviction that no better investment can be made than the expenditure of money in the proper decoration of such buildings, which thus not only add to the attractiveness and interest of

the city in which they stand, but are calculated to be a valuable means of artistic education and an inspiration of true patriotism." We also add here the hope that this gift of a distinguished Canadian artist may also call attention to the fact that Toronto has not yet erected an art gallery or museum in which a permanent collection of paintings may be housed, exhibitions annually held, and Canadian Art otherwise stimulated. In this respect the enterprising capital of Ontario is behind the city of Montreal, and even the village of Sackville, in New Brunswick, where, it is not generally known, the only artistic building of this class has been built for some years in connection with Mount Allison University, where a distinguished Canadian artist, Professor Hammond, gives lectures in art, with the assistance of the fine collection of paintings—in some respects the best in the Dominion—which is found on the walls of the museum.

17. Canadian Archives.

The annual report presented to Parliament by Dr. Brymner, the archivist, contains the usual interesting material. The calendar gives an abstract of the documents relating to the Provinces of Upper and Lower Canada from 1824 to 1828 for each province. An interesting document in the preliminary report is a memorial for an Act of Incorporation for a company to employ steamers between Valentia, on the southwest coast of Ireland, and Halifax, Quebec and New York, returning to Valentia, thence by subsidiary lines to Bristol, the Clyde, etc. It is pointed out that the first proposal for a steam service with Quebec was supposed to have been made in 1851 or 1852 ; the memorial here published shows that such a proposal had been made nearly thirty years before.

A letter of Wolfe's has been published for the first time in full, and in the notes is a report from him on the progress of the siege, which gives an account of the disaster to the Grenadiers in consequence of the rash and ill-advised attack without waiting for orders.

The notes contain (A) papers relating to the siege of Quebec ; (B) correspondence relating to the formation of land companies in Canada ; and (C) documents respecting the nationalizing of aliens arising largely out of the disputes as to the qualifications of Barnabas Bidwell to represent a constituency in the provincial legislature.

18. Tidal Surveys.

It is with much regret that the Council have heard that the Minister of Marine and Fisheries is unable, this year, to proceed vigorously with

surveys of the tides and currents in Canadian waters. Only about $5,000, or one-half the sum of former years, is to be appropriated.

From the remarks made by Sir Louis Davies in the recent debate on the question in the House of Commons, he appears to have been misinformed as to the importance and necessity of the service by some officers of his department. It is only necessary to refer to the Transactions of the Royal Society of Canada for years, and to a memorial from 400 of the ablest navigators of the Dominion, in the reports of the department, to see that the weight of the authority of scientific men, as well as practical sailors, is in favour of such tidal investigations. The Minister himself, we are confident, will look fully into the matter as one of national interest.

19. The Total Eclipse of the Sun in 1900.

The following circular explains itself, and is referred to the Third Section of this society for their consideration :—

February 10, 1899.

Dear Sir :

At the Conference of Astronomers and Astrophysicists, held at the Harvard College Observatory in August last, a committee was appointed to gather information regarding intended observations of the total eclipse of the Sun which will occur on May 28, 1900. As the Moon's shadow will pass from near New Orleans to near Norfolk, it may be expected that many observers will take part in the eclipse work, and the committee is ready to do anything in its power to secure concert of action among them.

It is well to remark, in the first place, that the duration of totality is brief. It will amount only to about $1^m\ 40^s$ where the shadow passes into the Atlantic Ocean near Norfolk, and will diminish toward the southwest. Hence less can be done than if a longer duration were available. Observers will probably prefer stations east of the Alleghenies, as west of those mountains the duration will range from $1^m\ 13^s$ near New Orleans to $1^m\ 30^s$ near the mountains. Should you desire to coöperate in any plan that may be arranged by our committee, we should be pleased to learn from you the following particulars :

(1) Your opinion as to what measures, if any, should be taken to secure observations of the eclipse on a well-concerted plan.

(2) Your opinion as to what classes of observations are to be considered most important, with suggestions regarding the best means of making them.

(3) Whether you, or any party from your institution, expect to take part in the work in question.

(4) Whether you can raise the necessary funds for the work you desire to undertake, or consider some general appeal to the public to be required.

(5) What class of observations you feel best prepared to make, or will be likely to prosecute.

Your reply, which the committee will be glad to have permission to publish, should this prove to be desirable, may be addressed to the Secretary, Yerkes Observatory, Williams Bay, Wis.

Very respectfully,

SIMON NEWCOMB, Chairman,
GEORGE E. HALE, Secretary,
E. E. BARNARD,
W. W. CAMPBELL,
COMMITTEE.

20. SEVENTH INTERNATIONAL GEOGRAPHICAL CONGRESS, BERLIN, 1899.

The Honorary Secretary has received a communication informing the Royal Society that the Geographical Society of Berlin, which is assisted by a General German Council, cordially invites the friends and promoters of geography in all countries, and especially the members of all geographical societies and cognate scientific bodies or institutes to assemble at the German capital for the meeting of the seventh International Geographical Congress. The meeting of the Congress will take place from Thursday, September 28th to Wednesday, October 4th, 1899.

The subjects which may be treated or discussed at the Congress are embraced in the following groups :

1. Mathematical geography, geodesy, cartography, geophysics ;
2. Physical geography (geomorphology, oceanology, climatology) ;
3. Biological geography ;
4. Industrial and commercial geography ;
5. Ethnology ;
6. Topical geography, exploring travels ;
7. History of geography and of cartography ;
8. Methodology, school geography, bibliography, orthography of geographical names.

All correspondence relating to matters of the Congress is to be addressed

To the VII. International Geographical Congress,
90 Zimmerstrasse, Berlin, S.W.

According to preceding usage, the English, French, German, and Italian languages are admitted as languages of the Congress, and all papers must be written in one of them.

21. The Cabot Celebration at Bristol.

The Honorary Secretary was unfortunately unable on account of the condition of his health to attend the formal opening of the Cabot Memorial Tower at Bristol in the month of October last. Mr Gilbert Parker was opportunely present in England at this time and represented the Royal Society of Canada at the ceremony in which the Marquess of Dufferin and Ava took the leading part. Mr. Parker spoke at the banquet which followed the opening of the Tower, and referred to the deep interest that the society had taken in the honours paid to John Cabot after four hundred years of forgetfulness by the Anglo-Saxon race on which he had conferred such enduring benefits. Indeed, Mr. Parker claimed with some justice for the society the initiation of the movement which raised the Cabot monument and a tablet in his memory in the Legislative Council Chamber at Halifax. A sketch of the Cabot Tower was given in the last volume of our proceedings.

22. Marine Biological Station.

In accordance with the recommendations of a committee appointed by the British Association at its Toronto meeting, the Government has been pleased to aid in the establishment of a Biological Station in the Gulf of St Lawrence for an experimental period of five years.

This station is designed to afford the means whereby the food supplies and the general conditions of life of fish, oysters and lobsters may be thoroughly investigated. It is hoped that this work may be carried out chiefly by competent investigators connected with our leading universities. An initial grant of $7000 for construction and equipment of a floating station has been made, and the construction is now in progress with a view to active work during the coming summer.

The management of the station is invested in a Board elected by the leading universities of the Dominion and constituted as follows :—

E. E. Prince, Director, Department Marine and Fisheries.
Professor D. P. Penhallow, F.R S.C., of McGill University.
E. W. McBride, of McGill University.
Professor Ramsay Wright, F.R.S.C., of Toronto University
Dr. A. B. Macallum, of Toronto University.
Professor L. W. Bailey, F.R.S.C., of the University of New Brunswick.

Professor A. P. Knight, of Queen's University.
Dr. A. H. Mackay, F.R.S.C., of Halifax, N.S.
Rev. F. A. Huart, of Laval University.

23. Measurement of the 98th Meridian Across the North American Continent.

In accordance with the desire expressed at the last general meeting of the Royal Society, the Honorary Secretary forwarded to the Governor-General-in-Council the following memorial, prepared by a committee, (whose names were suggested at the meeting in question) with the object of securing the co-operation of the Canadian Government in the measurement of the 98th Meridian across the North American Continent—an important subject to which Professor C. H. McLeod specially directed the attention of the Council and Fellows generally in May last:

To His Excellency the Governor-General in Council:

The Royal Society of Canada has the honour to bring to the notice of Your Excellency a proposal by Dr. Pritchett, Superintendent of the United States Coast and Geodetic Survey, to measure an arc along the 98th Meridian from Acapulco, Mexico, to the shore of the Arctic Sea in Canada. Dr. Pritchett's views are explained in a paper read by him at the last meeting of the society. A copy of this paper with explanatory maps is appended.

The measurement of the 98th Meridian has been in progress for some time as part of the general survey of the United States; the object of Dr. Pritchett in urging its extension through Canada and Mexico, is to provide data for the determination of the figure and dimensions of the earth, and while from this point of view the work would be purely scientific, the Canadian portion of it would also be of great practical utility in forming the basis of a thorough geographical survey for this Dominion.

While it is true that the promotion of science is mainly due to a few of the most advanced and wealthy nations and that these nations have frequently sent expeditions or established stations abroad when information had to be obtained in semi-civilized or wild and uninhabited countries, it is also a fact that the least favoured of the civilized nations have not unfrequently assumed the task of assisting science to the extent of collecting data obtainable within their own borders.

In the present instance the survey is in progress within the limits of the United States, and quite recently the Government of Mex-

ico has announced its readiness to undertake its part of the work; the successful execution of the project as a whole, therefore, now entirely depends on the co-operation of Canada. It is respectfully suggested therefore, that a limited grant for this purpose would be regarded as a contribution to aid in the general researches of the nations of the world, while all the extensive triangulations have seldom been undertaken upon scientific grounds alone; their primary object has been utilitarian and to provide a basis for systematic surveys. Without such a basis, there is no finality in results; the same ground is being surveyed over and over again, as is the case in the Dominion, by the land surveyor, the geologist, the railway or canal engineer, the hydrographer, etc. For every new project a new survey has to be made. The labour and expenditure on these surveys would be considerably reduced and often entirely unnecessary if we had a systematic triangulation carried out as in other countries. This fact has long been recognized in Europe where every country has been accurately mapped. Outside of Europe may be cited the United States whose triangulation is well advanced; India, which offers a striking instance of extensive and well conducted surveys, the Cape of Good Hope and Natal which have executed a joint triangulation has preceded all other surveys. It must not be supposed that there were no objections raised in these countries to the inception of this work; on the contrary, it was frequently opposed by those who did not understand its practical value, but their opinions changed after they had been in a position to appreciate its usefulness. Of the survey of South Africa, Mr. David Gill, Her Majesty's Astronomer at the Cape, says:—

"The influence of the Geodetic Survey has made itself felt by raising the whole tone of survey operations in South Africa. Strongly as it was at first opposed, and grudgingly as it was maintained, its advantages are now fully acknowledged and by none more warmly than the Surveyor-Generals of the Cape Colony, Natal and Bechuanaland."

The triangulation of the 98th Meridian would be for Canada, the first step in the right direction, to be followed by others as the resources of the country would allow. It is believed that an appropriation of, say $10,000, for a few years, would be sufficient to carry to completion the measurement of the 98th Meridian. The Royal Society of Canada strongly recommends such a grant and believes that the work will be of great benefit to Canada, not only by its immediate practical results, but also in placing the country in a most favourable light before the scientific world.

And your memorialists humbly pray that Your Excellency will

be pleased to take this important matter into your favourable consideration.

(Signed) T. C. Keefer, President.
J. G. Bourinot, Hon.-Secretary.

24. Decease of Fellows—the Historian Kingsford and the Poet Lampman.

With a feeling of deep sorrow we record the death of two of the most distinguished workers of the Royal Society. Dr. Kingsford disappeared from the field of earthly endeavour at an extreme old age—Mr. Lampman in the very prime of life. Both were writers who had made an impress on Canadian literature, though their personal characteristics and intellectual powers were very different. One was a sweet singer endowed with a rich gift of imagination, the other had a mind with a decidedly practical bias which always forced him to call a spade a spade and rarely, if ever, permitted him to rise beyond the stern conditions or thoughts of human life. One was a very personification of modesty which too often prevented him from giving full scope to his poetic genius and forcing himself on the attention of a Canadian world which now, that he is beyond all earthly aspirations and ambitions, is willing to pay a tribute of esteem and admiration which it forgot to give him in the days when some generous appreciation might have saved him some bitterness and encouraged him to greater effort.

Dr. Kingsford had in the course of a long and eventful life, fought courageously with the world—sometimes he was on the top of a wave of prosperity, but as often as not he was tossed about in the surging current of adversity; but amid all the fluctuating circumstances of his career he showed a bold front which resisted all "the stings and arrows of an outrageous fortune." Like all men of deep feeling and earnest conviction he was a warm friend and a passionate opponent; he never forgot or forgave when he believed that he had been unfairly treated or injured in the battle of existence. Possessed of a strong physique and a powerful will, he was well fitted for the rude competition of humanity though his friends have often thought that a little calmness of judgment and a more yielding or conciliatory spirit at times might have saved him many heartburnings. When men once knew him well, and made allowance for the weaknesses which all of us possess, they learned to value highly his rugged sincerity and his kindly heart which always responded gratefully to the acts of kindness and appreciation which now and then came to soothe his declining years, otherwise too often years of gloom and despondency.

WILLIAM KINGSFORD, LL.D.

Mr. Lampman, we now know, had been suffering for a long time from a dangerous constitutional infirmity which unfitted him for the excitement or turmoil of life, and all of us who knew him well and admired his genius must always regret that so fine a mind should have been so long exposed to the depressing influences of a petty government office. How happy might have been his life, how rich might have been the fruition of his own poetic growth could he have realized his own poetic dream.

> "Oh for a life of leisure and broad hours
> To think and dream, to put away small things,
> This world's perpetual leaguer of dull naughts;
> To wander like the bee among the flowers
> Till old age find us weary, feet and wings
> Grown heavy with the gold of many thoughts."

He has left behind him only three small volumes of poems—one soon to appear under the auspices of friends—but while the number of his printed pages are insignificant they are full of poetic inspiration, and no Canadian poet has equalled him perhaps, in literary finish and rhythmical flow of verse.

He was a Canadian by birth and education—essentially a product of Canadian intellect—a descendant of one of those Loyalist families who came to the valley of the St. Lawrence in 1703 and were the British makers of Canada at the most critical stage of our young nation's growth. Everywhere do we find in his poems "the flavour of his own native soil," his deep love for the trees, flowers, and the varied aspect of Canadian scenery. An English critic has truly said that "in one short poem 'Heat' he has succeeded in producing alike in colour, atmosphere and sentiment, the most perfect expression of Canadian landscape that has ever been achieved in poetry or prose." In another short poem "Between the Rapids" he has also touched a chord of sentiment which makes "the whole world kin" and shows how delicate and tender was the heart of the poet.

Dr. Kingsford's voluminous contributions to Canadian letters, from their practical character and absence of artistic finish, are in striking contrast with the poet's little books of pure imagination. He was a most conscientious student of Canadian history, and the ten volumes he has left behind him are the results of many years of labour under great disadvantages. His work is not distinguished by any grace of style, but his language is plain and simple in the extreme, and his great defect is diffusiveness or an inability for condensation. The reader can never look

to his pages for that fascination which all of us find in the books of Francis Parkman, whose deep love for nature and power of description enabled him to invest the story of the past with singular charm. Dr. Kingsford's work is, on the whole, a fair dispassionate review of the two great periods of Canadian history, extending from the foundation of Quebec by Champlain down to the union of the Canadas in 1841. That bias or feeling or prejudice, which too often, in personal intercourse, were apt to obscure his judgment of contemporary events and persons, appears to have yielded to a spirit of true, honest criticism when he took his pen in hand and recalled calmly and judicially the incidents of the two hundred and forty years which were embraced in his bulky history. His accounts of the war of 1812-1814 and of the risings in Upper and Lower Canada in 1837 and 1838 are on the whole dispassionate reviews of events which have been too often described from the point of view of the mere partisan or sentimental politician who believes that because grievances remain long without redress rioting, confusion and rebellion are justifiable under all conditions. Dr. Kingsford, we may here add, was by birth an Englishman who came to Canada in an English regiment when he had just attained manhood, and subsequently embraced the profession of civil engineering, in which he attained some distinction. Like so many other eminent men who were not born or educated in Canada—notably W. Lyon MacKenzie, Alexander Mackenzie, Lord Strathcona, Sir Sandford Fleming—he became Canadian in thought and aspiration from the moment he decided to make his home in Canada, to whose instructive history he devoted so many years of his declining and not always fortunate life.

It is pleasant for all of us to hear that a benefactor of a great Canadian university, now that the aged historian has at last found that rest which he could never reach in the hurly-burly of life, has shown his appreciation of the historian's services by founding a chair of history associated with his name, and at the same time by showing generous consideration to one near and dear to the aged writer. Perhaps it may be some encouragement to the student, patiently and industriously delving into the records of the past, or to the poet weaving sweet measures of rhyme full of inspiring thoughts, to know that when they have gone to their long sleep their countrymen and countrywomen will remember them at last and pay them that honour and give them that fame which was never accorded them in their struggling lives. Yet even if this be so, it would be well for all of us to endeavour to raise ourselves above the material thoughts and selfishness of the present, and help by words of sympathy or acts of practical kindness the men and women who

ARCHIBALD LAMPMAN.

are the pioneers of a national literature, who are labouring to create a deeper interest in our country's history, or to carry us into the pure and serene atmosphere where the true poet reigns supreme. How much encouragement might our universities give to men like Lampman if they would sometimes recognize the fact that the historian and the poet are just as useful and earnest workers in the promotion of the intellectual development of the country as the statesman or divine on whom they are so ready to confer their highest honours. All of us, however, are ever ready to worship success in material things and sometimes forget that the ideas of the poet or the wisdom of the historian or the elevating romance of the storyteller may have at times as much influence on the social or moral development of our country as the speeches of the statesman or the sermons of the preacher. For of the knowledge of the historian or the poet, Lampman has well said :

"What is more large than knowledge and more sweet ;
Knowledge of thoughts and deeds, of rights and wrongs,
Of passions, and of beauties and of songs ;
Knowledge of life ; to feel its great heart beat
Through all the world upon her crystal seat ;
To see, to feel, and evermore to know ;
To till the old world's wisdom till it grow
A garden for the wandering of our feet."

25. Farewell Address to the Earl and Countess of Aberdeen.

The farewell address of the Royal Society of Canada was presented on the afternoon of October 28th, at the Government House, to the Governor-General and the Countess of Aberdeen, by the President, T. C. Keefer, Esquire, C.M.G., C.E., accompanied by Sir John Bourinot, K.C.M.G., hon.-sec.; Dr. Fletcher, hon. treas.; Sir S. Fleming, K.C.M.G.; Sir James Grant, K.C.M.G.; Dr. Brymner, Mr. Whiteaves, Dr. Hoffmann, E. Deville, W. W. Campbell, B. Sulte, Dr. Saunders, Dr. S. E. Dawson, Dr. DeCelles, A. Lampman, and other fellows resident in Ottawa. The address is of elaborate design. On the initial page, containing the inscription of the address, done in two large ovals set side by side, is a device of purple flag lilies, surmounted by the double "A" in monogram and a coronet. The address proper occupies nine sheets, the lettering set in two oblong spaces, the English and French versions side by side. Each sheet is surmounted by a broad border of illustrations and decoration. On innumerable little medallions, wreathed round by the ground-

work of floral design, are views of Canadian scenes, from Summerside and Halifax on the far eastern coast, to Victoria, on the Island of Vancouver, in the Pacific Ocean. Exquisite views of the Chateau de Ramezay, McGill College, Victoria Hospital, Toronto University, Maisonneuve's monument, St. John, Halifax, Quebec Parliament Buildings, citadel and gates, Kingston, Winnipeg, scenes on the picturesque rivers and bays of the lower provinces, Grandpré and the Basin of Minas, scenes among the Thousand Islands, on the prairies of the North-west, in the Rocky Mountains and Selkirk range, in the Kootenay country and even as far north as Five Finger Rapids in the Yukon district—are depicted in miniature framings less than two inches in diameter. The only view outside the Dominion is one of Haddo House, their Excellencies' home in Scotland, and which appropriately faces the sketch of Rideau Hall. The devices for the groundwork of the borders embrace designs of hydrangea, pond lilies, clover, vine, maple leaves, hepatica, the Nova Scotian mayflower, a device of rose, thistle and maple leaves and one of marguerites and butterflies. On one page, especially devoted to reminiscences of the Victorian Order of Nurses, is a maple wreath in the shape of a V forming a background for a medallion portrait of Her Majesty, while the rest of the decoration of the sheet show the light and dark-blue ribband of the Order, and detached forget-me-not flowers. The last sheet embraces various scenes of winter sports and amusements, set in borders of snow on a ground of pine branches and maple leaves. The arms of the several provinces of the Dominion are distributed through the different sheets amongst the other decorations. The address was designed by Mr. A. G. Doughty, of Quebec, the illumination and etching was done by Mr. Lyndewode Pereira, of the Interior Department at Ottawa, and the lettering by Mr. R. P. King, of the House of Commons staff.

THE ADDRESS.

The address, which was signed by all the Fellows present in Canada, was as follows :—

"To Their Excellencies the Earl of Aberdeen, P.C., G.C.M.G., LL.D., D.C.L., Governor-General of Canada, Honorary President of the Royal Society of Canada ; and the Countess of Aberdeen, LL.D., President of the National Council of the Women of Canada :

"Now that the time is close at hand when your Excellencies must take your departure from this country, the members of the Royal Society of Canada desire to give expression to the feeling of deep regret which arises in their hearts at such a moment, and also to recognize the claims

which you both possess upon the affection and respect of the people of the Dominion, from Sydney on the Atlantic to Victoria on the far Pacific coast.

"This society only echoes the sentiment of all thoughtful men and women, who have witnessed the history of your respective careers in this country, when it expresses the opinion that Canada has been for five years exceptionally favoured by the presence of a distinguished gentleman and lady who have endeavoured to discharge all the duties of their exalted positions with so deep a sense of the great responsibilities resting upon them, and who have super-added to their official duties a sincere and almost passionate desire to promote the best interests of the inhabitants of Canada, irrespective of race, creed, or party, by every means in the power of persons raised so far above the ordinary conditions of things in this country.

"It has been a happy thing for the unity of the British Empire that ever since the concession of responsible government, which removed the head of executive authority from the active conflict of party, we have had a succession of distinguished governors, animated by the most earnest desire to carry out dispassionately and honestly the principles of British administration, and to leave behind them at the close of their tenure of office a deep respect for the rules and traditions of the great school of British statesmanship. Not only at an hour like this, when it becomes the duty of all, 'to speed the parting guest' with kind words and thoughts, but in long years to come, all classes of Canadians will recognize that the lustre of the historic name of Aberdeen has not been dimmed in this dependency of the Crown, but will justly take a high place on the brilliant roll where are already inscribed the honoured names of Elgin, Dufferin, Lorne and Lansdowne.

"A keen student of British political institutions has well observed that among other useful attributes the Crown represents what may be called 'the dignified part' of the British Constitution. It is safe to say that in Canada, as in other parts of the Empire, this important characteristic of monarchy has been invariably well maintained, and Canadians have learned to value highly the advantage of living under a system of government which lifts the Governor-General, like the Queen, above the conflict of party and enables him to discharge his high obligations with a dignity which allows men of all opinions to meet on a common ground of social intercourse and in that respect helps to modify the harsher features of our political life. At the Government House in Ottawa, and at other places in the Dominion, where your Excellencies have given opportunities to the people to pay their respects to the representative of

royalty, your hospitalities have been offered with a gracious and patient kindness which has relieved what might sometimes be an irksome ceremony to some persons in this democratic country, without in any way detracting from the dignified attributes which are inseparable from the high positions of your Excellencies.

"Composed as it is of members of the two nationalities, sprung from the British and French peoples, the Royal Society of Canada cannot refrain from expressing its high appreciation of the deep interest Your Excellencies have taken in everything that appertains to the intellectual development of this country in all its aspects. Whenever the society has assembled in this city, the Governor-General, as honorary president, has never failed by his inspiriting words to encourage the growing taste for literature and science in this country, where historians, poets, novelists and publicists have made their mark, as notably in French as in English Canada. The success which has so far attended the efforts of the Royal Society to bring together on a common basis of intellectual endeavour the literary and scientific men of the two nationalities will be among the evidences that Your Excellencies will take away with you to the Imperial state of the generous and active co-operation of the two races in all matters relating to the common welfare of a dominion, the foundations of which were laid nearly three hundred years ago on the heights of Quebec by Frenchmen whose descendants still speak the language and cherish the institutions of old France under the protecting ægis of wise British statesmanship.

"In bearing our testimony to the fidelity with which the Governor-General has fulfilled the duties of his office, we must at the same time recognize with gratitude the active interest that Her Excellency the Countess of Aberdeen has taken in all matters affecting the social, moral and educational development of this country. Her addresses to the National Council of Women, which owes its existence and success to her untiring energy, are replete with thoughts and ideas worthy of deep and continuous study by the classes for whom they were specially intended. In her efforts to establish a Victorian Order of Nurses, for that class of people who are not blessed with stores of this world's goods, we have but one of many examples of an unselfish wish to be something more than the recognized head of an exclusive society at Government House, and to identify herself with the daily lives of that far larger body of people who are among the toilers of our land, who have to bear many burdens, even in this country where the conditions of labour are so favourable compared with those of the same class in the older countries of the world.

"The expression of regret with which we take leave of Your Excellencies is not a mere formal utterance on the departure of distinguished persons connected for some years with the official and social life of this country, but is such an exhibition of emotion as we would give when one of us parts from those that are dear and near to us. It is pleasant, however, to feel that, while His Excellency is to sever the official ties that have bound him to this Dominion, his personal interest in it will remain as strong as ever. The extensive domain which he owns in the rich province washed by the Pacific waves, now connects the name of Aberdeen as closely with Canada as does stately Haddo House with the famous Scottish shire which has given more than one title to the eminent family of which His Excellency is now the honoured head. But higher than all considerations of territorial or pecuniary interest, is the love which, we all feel, has grown up in the hearts of Your Excellencies for this country and its people,—a love which will always force you both to take the liveliest interest in the fortunes of this young nation—to sympathize with its adversity and trials, and rejoice with its prosperity and success."

LORD ABERDEEN'S REPLY.

His Excellency, in replying, expressed the great pleasure which he and Lady Aberdeen experienced at being made the recipient of so flattering an address, couched in such graceful language and which deserved the highest consideration from the fact that it came from so distinguished and so representative a body as the Royal Society of Canada. As for the address itself, he designated it as "nothing less than a store house of delightful artistic design and pictorial art," and assured his hearers that it would not only be a cherished possession of Lady Aberdeen and himself, but would "form a lasting and delightful souvenir" for them and their children and friends for many a long day. Referring to the society itself, he made allusion to the prominent position it occupied, and the good work it was doing and referred to the great interest shown in it by his predecessors, Lord Lorne, Lord Lansdowne and the Earl of Derby, and assured his hearers that it would always occupy a very warm corner in his own heart. Continuing, His Excellency said, "Nature has not endowed me with a very pachydermatous external covering in matters of this sort—(laughter)—therefore, I must be careful and not try to express too fully the feeling prompted at the present time. Among the many special points and features of which you have said you can easily believe that the reference to Lady Aberdeen (who in a very full sense is the joint recipient of this address) you can, I say, easily believe that these words of kind good-will, confidence, encouragement and

appreciation come home to me as well as to her with peculiar significance. I feel quite sure, gentlemen, that you will never have to alter or even to modify your expressions of confidence and approval in regard to those movements which Lady Aberdeen has been associated in this country. (Applause.) I believe these movements are being placed on a firm and sure foundation and that they will go on and prosper. I need hardly say that I allude to the National Council of Women, a society which has conferred among many others this benefit that it has brought together workers for the public welfare not only different in origin and race, but also in politics and opinions in a manner in which they have never been brought before. I would also allude to the Victorian Order of Nurses, which was founded as a national memorial of the Queen's diamond jubilee, and which has Her Majesty's special personal sanction and approval. This is an undertaking still in its infancy, but one as of the future of which I feel the utmost confidence. Every day shows how it is being appreciated and how it meets a real need.

"While speaking of the position and alluding to the history of the Royal Society during the past five years, I cannot help wishing to make a passing reference to an incident of interest to all the members of that body, namely, the fact that some of them have received marks of distinction at the hands of the Queen. (Applause.). We may be sure that while members of these societies have occasion to distinguish themselves in other ways, their services to the Royal Society have certainly formed no small element in the case. Naturally, I refer to the honour conferred upon one whose name more than that of any other, has been identified with the work and promotion of this society, Sir John Bourinot. It is most essential for the life and growth of every young country that it should possess writers and scholars and leaders of thought who will guide the people to interest themselves in wider questions than those concerned with local interests or provincial affairs. They like to take their place in the world at large and therefore when individual Canadians make the country known and make themselves known, we may well feel that they are benefactors of the country and thus deserving of honour and distinction. I make that observation with reference to Sir John Bourinot because I have noticed that his name is very familiar in England and in other parts of the British Empire. So I say that not only the members of the Royal Society but all Canadians may feel gratified when men like Dr. Bourinot and Sir Sandford Fleming are selected for distinction. And now, gentlemen, I wish to endeavour to express in a concentrated way our thanks, not only for the action of to-day but for past manifestations of unvarying courtesy, consideration and thoughtfulness. It is a great

happiness to feel that we may claim acquaintance and more than acquaintance with those present. We feel some of our oldest and best friends are here and if anything could be added to the earnestness with which we offer our thanks and good wishes it would be the constitution of this representative gathering of members of the Royal Society. (Applause.) To the president and all present I personally and Lady Aberdeen also, give our united, hearty and warm greetings, thanks and good wishes. (Loud applause.)

General Business.

The following motions were agreed to :—

(1) "*Resolved*, That the minutes of Proceedings, as they appear in the printed report for 1898-9 (volume IV.) be approved." (On motion of Sir J. Bourinot, seconded by Dr. Fletcher.)

(2) "*Resolved*, That the Report of the Council be adopted." (On motion of Sir S. Fleming, seconded by Professor Clark.)

(3) "That the following Fellows be a Committee to make nominations for officers of the Society for the ensuing year : T. C. Keefer, President, Dr. G. M. Dawson, Sir S. Fleming, Dr. S. E. Dawson and B. Sulte." (On motion of Dr. Johnson, seconded by Dr. Hoffmann.)

(4) "*Resolved*, That a special committee of five members be appointed—one from each section and the president—to ascertain what number of members, if any, in each section, have failed to take an interest in the work of the society by non-attendance or otherwise, for three consecutive years, and to report to the society the names of such members, with the view of having them placed on the retired list, should such a course be deemed expedient.

"That such committee consist of Dr. Frechette, Dr. S. E. Dawson, Professor McLeod, Dr. Ells and President Keefer." (On motion of Sir S. Fleming, seconded by Dr. S. E. Dawson.)

(5) *Resolved*, That the President of the society and the Presidents of the four Sections, be a special committee to consider the advisability and proper means of extending the membership of the society, as suggested in the last report of the Council, and to report thereon to the next general meeting of the society on Thursday next." (On motion of Mr. Arthur Harvey, seconded by Sir S. Fleming.)

(6) "*Resolved*, That the Royal Society of Canada has noted with pleasure the statement made on behalf of the Government with regard to the preparation of plans for a new Museum to hold the collections of the Geological Survey and the Archives of Canada, and beg leave respect-

MARINE BIOLOGICAL LABORATORY LIBRARY

fully to urge the necessity which exists for giving immediate effect to this great public project." (On motion of Dr. Fletcher, seconded by Sir James Grant.)

Tidal Currents and Hydrographic Survey.

Dr. Johnson made the following report on this subject : —

A committee was appointed at the Halifax meeting in 1897, to wait on the Government and urge not only the restoration and increase of the grant for the survey of the tidal currents, but also the establishment of a hydrographic survey department for the Dominion which would be responsible for the tidal survey and also for all other hydrographic work needed on our coasts.

An interview was asked for and a day was appointed, but unfortunately the letter making the appointment was wrongly addressed, and did not reach its destination until too late. No further appointment was found possible during that session of Parliament.

In the year's interval the necessity for the action which the society has been recommending has been exemplified in a very remarkable way.

Stated briefly, the case which the society presented was this :—

1. The loss of shipping and of life in Canadian waters is very great, and is, by comparison with the losses of other nations, extraordinary. This is shown by the wreck lists published by the Government, and more especially by the rates of insurance.

2. The memorial of the society dwelt particularly on the great disadvantage to Canadian trade and navigation caused by the very high rates of insurance, and pointed out at the same time that as Canada did not take the same care as other nations in safeguarding navigation, greater losses, and therefore these rates, higher than elsewhere, might be expected.

3. The society advised that Canada should adopt the same measures as other nations in providing for the safety of navigation; and in support of its views submitted the opinions of hydrographers, and a petition of nearly 400 (four hundred) masters and officers of the mercantile marine.

As if to emphasize the representations of the society, the insurance companies have lately as is well known, raised the rates for Canadian ports to a still higher level, so that their disadvantage compared with United States ports is increased.

Under these circumstances, it is not surprising that there was a general interest exhibited in the recent interview with the Government.

Seven different bodies were represented :

1. The Board of Trade of Montreal.
2. The Board of Trade of Toronto.
3. The Shipping Interest of Montreal.
4. The Underwriters.
5. The Chambre de Commerce of Montreal.
6. The Pilots.
7. The Royal Society of Canada.

A number of members of Parliament were also present.

The Government was represented by four members of the Cabinet, including the Prime Minister and the Minister of Marine.

The memorial of your society was presented, an explanation given, and, more especially, extracts were read from letters from two leading hydrographers, one in the Hydrographic Department of Great Britain, the other in the Hydrographic Department of the United States.

These extracts gave the personal opinions of those officers in favour of the measures recommended by the society. They were, of course, unofficial, but the Government was asked to apply for official information and advice in a matter so vital to the commerce of Canada to the Admiralty.

The interview lasted nearly two hours, and the representatives of the other bodies supported the recommendations of the society. There was no expression of opinion on the part of the Government.

A. JOHNSON,
Chairman of Committee.

August 19, 1899.

REPORTS OF ASSOCIATED SOCIETIES.

The reports of associated societies were then called, and read as follow :—

I.—From *The United Empire Loyalist Association of Ontario,* through SIR JOHN BOURINOT.

The association reports that its membership for this the second year of its existence is in a most satisfactory manner, whereas 165 members were reported at the last annual meeting, the membership has now increased to 314.

The "Constitution and By-laws" as amended were formally adopted by the general association at the meeting held April 14th, 1898.

This association in joint action with the associations in Nova Scotia, New Brunswick and Quebec, has accepted the anniversary of the

landing of the U.E. Loyalists in St. John, New Brunswick, then called "Par Town, Nova Scotia," in 1783, as "U.E.Loyalist day."

Deputations waited upon the Hon. the Minister of Education and the Mayor of Toronto to request that flags might be displayed on civic buildings and public school buildings on that day. Both requests were granted, consequently on May 18th the flags were hoisted on these buildings, and many private citizens joined in the celebration, showing their approval of the movement by having their flags put up.

A communication waited upon the Hon. the Minister of Agriculture requesting that in the next general census, for the Dominion of Canada, a special column might be placed wherein those of U.E. Loyalist descent may enter the fact. An answer has been received that the matter will receive careful consideration.

That the loyalty of the Indians might be fully recognized by this association, Chief Johnson (Kanongweyondoh) was elected Honorary Vice-President to represent the Six Nations Indians of the Grand River Reservation, and Chief Samson Green (Annosothkah) was elected Honorary Vice-President to represent the Mohawks of the Bay of Quinté of the Tyendinaga Reserve, and silver medals were presented to these chiefs by the general association to be worn by them and their successors in office.

By a clause in the constitution admitting "all who have done the association distinguished service" to honorary membership, this distinction has been offered to Sir John Bourinot, K.C.M.G., and Dr. Canniff of Gravenhurst, and by them accepted.

This association, acting in connection with the various historical societies throughout the province, passed a resolution protesting against the erection of a monument in Quebec to General Richard Montgomery.

A resolution was passed approving of the introduction of Imperial Penny Postage at Christmas, 1898. Copies were sent to the Duke of Norfolk, Postmaster-General of Great Britain, the Hon. William Mulock, Postmaster-General of the Dominion of Canada, and also Mr. Henniker Heaton.

On June the 18th and 19th an excursion to Deseronto and Adolphustown took place. In accordance with an invitation extended to the Royal Society to send a delegate to the meeting held in Ottawa May 24th, the executive committee appointed the secretary, Mr. Wm. Hamilton Merritt to represent the association. He had the honour of presenting a report on the U.E.L. Association in Canada. This paper has been printed in the Annual Transactions of Royal Society, a volume which is sent to every library of any note throughout the world. By

this means the working and aim of the U. E. Loyalist associations throughout Canada will be made known to descendants of U.E. Loyalists who may now be scattered in many remote parts of the habitable globe.

The first volume of "Annual Transactions" was issued in December, 1898, presenting the papers read at the meetings to all members.

On December 16th, being the first occasion of a visit to Toronto by His Excellency the Governor-General of the Dominion of Canada, and the Countess of Minto, who had previously accepted honorary membership in the association in most gracious terms, the President, Mr. H. H. Cook, was received by their Excellencies at Government House. They were also pleased to inscribe their autographs in the roll book of the association.

The papers read for the year are as follow :—

"Some Loyalist Homes," "Our First Excursion," by Mrs. Forsyth Grant.

"Some Incidents in the Life of an early settler in the Niagara Peninsula," by Surgeon-Major Keefer.

"Memoir of Captain Samuel Anderson," by Mrs. Rowe.

"Sketch of the life of the Hon. Henry Buttan," by the Rev. C. E. Thomson.

"Character of the United Empire Loyalists and their place in Canadian History," by the Hon. the Minister of Education, Dr. G. W. Ross.

"Sketch of the Secord family, 1775 to 1866," by Mrs. Dunn.

II.—From *The Natural History Society of Montreal*, through Professor Wesley Mills, Ph.D.

The Natural History Society of Montreal has the honour of submitting to the Royal Society of Canada the following report :—

The work of the last year just closing has been of a very encouraging character. The meetings have been well attended and the number of persons who have visited the museum was nearly double that of the previous year. This is due to the fact that the museum is now open free on Wednesday afternoons as well as on Saturday.

An endowment fund has been initiated, which we hope will attain such proportions as to enable the society to throw open its museum free daily, to obtain specimens, to provide additional lectures during the winter, and also to purchase new books for the library. In this connection I may state that the society is indebted to Mr. E. T. Chambers, librarian, for the work now in progress in the construction of a catalogue of modern type which will make the library more useful.

The society lost several members by death, but having elected a larger number of new ones than usual, there is a very decided increase in the roll of membership.

The following papers were read at the regular monthly meetings, and these gave rise to many interesting discussions :—

1898.

Nov. 8th.—Was given up to a Conversazione.

" 28th.—"The Asters and Golden Rods of Montreal." Rev. R. Campbell, D.D.

" 28th.—"The Origin of certain Iron Ores." Frank D. Adams, Ph.D., F.R.S.C.

1899.

Jan. 30th.—"Study of Evolution in Acteon." Prof. E. W. MacBride, M.A., B.Sc.

Feb. 27th.—"Geology of the Vicinity of Montreal." Frank D. Adams, Ph.D., F.R.S.C.

March 27th.—"What remains to be done for the Botany of the District of Montreal." Prof. R. Campbell, D.D.

April 24th.—"The Colour of Birds in relation to Age, Sex, Season and Inheritance." J. B. Williams, F.Z.S.

The Somerville Course of Lectures was as follows, and met with general appreciation. Most of the lectures were illustrated by lantern slides.

The success of this course and other similar ones should warrant the society in giving additional lectures during the winter months as previously suggested in this report, if the necessary funds are forthcoming :

Feb. 16th.—"Hydraulic Mining." Prof. J. Bonsall Porter, E.M. Am., Ph.D.

" 23rd.—"Wireless Telegraphy." Prof. E. Rutherford, M.A.,B.Sc.

March 2nd.—"Creatures of other Days." Prof. Frank D. Adams, M.A.Sc., Ph.D.

" 9th.—"The Canals of Canada." Prof. J. G. G. Kerry, M.A., E.A.M.

" 16th.—"New Gases of the Atmosphere." Prof. J. Wallace Walker, M.A., Ph.D.

" 23rd.—"Water-Power Development." Prof. R. B. Owens, E.E.

" 30th.—"The Food of Fishes." Prof. E. W. MacBride, M.A., B.Sc.

The Saturday afternoon lectures, intended for young people, were more popular than ever, as many as 250 attending on some occasions.

The following was the programme :—

March 4th.—"Kingfishers and Cuckoos." J. B. Williams, F.Z.S.
" 11th.—"Carlo and his Master." Dr. Wesley Mills.
" 18th.—"The Honey Bee." C. T. Williams.
" 25th.—"How Plants Live." Miss C. M. Derick.
April 8th.—"My Holidays in the Country." Rev. Thomas W. Fyles.
" 15th.—"How to know Plants." Rev. Robert Campbell, D.D.
" 22nd.—"Corals." J. B. Picken.
" 29th.—"Ocean Currents." Capt. W. Ross.
" 29th.—"The Elephant and the Mammoth." E. T. Chambers.

The annual field day was held on June 4th, at Rigaud Mountain, where the party was received by Mr. DeLery MacDonald, the seignior of the village, and spent a pleasant and profitable day.

The following are the officers and members of the council for the session 1898-99 :

Patron—His Excellency the Governor-General of Canada.

Hon. President—Sir J. William Dawson, LL.D., F.R.S., F.R.S.C.

President—Frank D. Adams, Ph.D., F.R.S.C.

Vice-Presidents—Lord Strathcona and Mount Royal, Rev. Robt. Campbell, M.A., D.D., Dr. Wesley Mills, B. J. Harrington, Ph.D., F.R.S.C., Geo. Sumner, J. H. Joseph, Hon. Justice Würtele, Walter Drake, and Hon. J. K. Ward.

Hon. Recording Secretary—Chas. S. J. Phillips.

Hon. Corresponding Secretary—W. E. Deeks, B.A., M.D.

Hon. Treasurer—F. W. Richards.

Curator—J. B. Williams.

Librarian—E. T. Chambers.

Members of Council—Albert Holden (Chairman), G. P. Girdwood, M.D., C. T. Williams, Prof. E. W. MacBride, M.A., B.Sc., A. F. Winn, Rev. E. I. Rexford, J. A. U. Beaudry, C.E., Alex. Brodie, B.A.Sc., H. McLaren.

Superintendent—Alfred Griffin.

In summing up the work of the last session, the society may congratulate itself on the success that has attended its efforts in promoting the study of natural history. A great deal remains to be done, and the society's future will depend in no small degree on the financial assistance it receives from its friends.

Mr. Alfred Griffin, the intelligent and enthusiastic superintendent, continues to facilitate the work of the society in a great many ways.

III.—From *The Botanical Club of Canada* (for the year, May 20th, 1898, to May 20th, 1899), through Dr. Fletcher, F.R.S.C.

Reverend Arthur C. Waghorne, Bay of Islands, Newfoundland, has been continuing his investigation of the flora of the island, and of the neighbouring coast of Labrador. Of the flowering plants and the higher cryptogams he has distributed 573 named species, 163 being Labrador plants. Of the mosses he has distributed nearly 625 species, 225 being from Labrador. Of the lichens, 476 species, of which 400 were from Labrador. Of fungi, he has at the latest date of report about 400 species. Among these are many species new to science. Among the phanerogams he reports *Fragaria Terræ-Novæ*, Trelease. The third part of his "Flora of Newfoundland, Labrador and St. Pierre et Miquelon," No. 265 to No. 538, is published in Volume IX., Part 4, of the Transactions of the "Nova Scotia Institute of Science, Session of 1897-8." His discovery of *Bartonia iodandra*, Robinson, at Grand Lake, Newfoundland, was accidentally omitted from this list.

From Prince Edward Island one report of phenological observations has been received. The Natural History Society of the island was resuscitated during the year. Plants new to the published flora of the island were collected as follows : By L. W. Watson, M.A., thirty-four, including *Viola Watsoni*, Greene ; by Rev. J. W. Godfrey, one ; by the Sectary, Principal John MacSwain, seven.

In Nova Scotia over 700 schedules, containing over 30,000 good phenological observations made in connection with the public schools, were sent in to the Education Department. Many of these schedules are more full that those made by the members of the club whose observations are tabulated in this report. As a study in phenology, the same ten plants were selected from ten schedules in each of the eighteen counties of the province, and averaged. The observation on each species was double: first, the date of the *first* flowering, then the date at which flowering was considered to be becoming *common*. In fixing the latter date the different observers might well be supposed to vary in their estimate of the time, and there is evidence of a personal element in the different schedules. The summation of as many as ten schedules from the various counties illustrates the small amount of this deviation when a great number of observers is massed together. The labour of compiling all the observations will be very great; but the compilation of the observations of only ten species from only ten schedules in each county has already been done, and will indicate approximately what we might expect from the whole.

THE AVERAGE DATES FOR THE "FIRST FLOWERING" OF TEN PLANTS IN EACH COUNTY OF NOVA SCOTIA IN THE YEAR 1898.

Date expressed as the day of the year—Feb. 28th=59, March 31st=90, April 30th=120, May 31st=151, June 30th=181.

PLANTS	Yarmouth	Annapolis	Digby	Kings	Shelburne	Hants
Mayflower	83·0	89·2	92·4	93·9	86·1	96·0
Blue Violet	113·7	122·5	122·8	122·1	120·9	122·82
Red Maple	120·6	119·0	127·9	117·7	122·7	119·2
Dandelion	113·6	120·2	111·9	124·0	121·8	124·0
Strawberry	115·0	122·3	117·5	116·0	126·0	123·4
Wild Red Cherry	137·9	134·7	140·7	141·3	144·7	141·1
Tall Buttercup	131·5	142·6	145·4	140·3	139·9	140·3
Indian Pear	139·5	136·2	138·4	139·8	139·2	140·2
Apple	142·6	142·2	141·6	144·5	146·8	146·2
Lilac	154·7	151·8	151·7	152·5	159·0	156·0
Average	125·21	128·07	129·03	129·27	130·71	130·92

PLANTS	Lunenburg	Queens	Pictou	Colchester	Halifax	Cumberland
Mayflower	93·4	90·8	97·9	96·8	92·8	101·4
Blue Violet	119·1	123·4	121·2	125·6	123·7	132·0
Red Maple	116·4	119·4	122·3	125·6	122·7	130·4
Dandelion	126·2	126·2	120·4	125·3	124·7	131·1
Strawberry	123·8	125·4	124·2	125·5	124·9	130·9
Wild Red Cherry	140·8	140·8	143·3	141·1	146·6	142·7
Tall Buttercup	149·5	148·8	142·0	148·0	148·4	147·1
Indian Pear	138·2	139·0	139·2	142·5	139·7	139·8
Apple	145·0	142·6	146·4	145·4	150·4	147·1
Lilac	159·2	157·6	152·3	153·7	161·0	155·6
Average	131·16	131·40	131·92	132·95	133·49	135·81

THE AVERAGE DATES FOR THE "FIRST FLOWERING" OF TEN PLANTS—*Continued.*

PLANTS	Antigonish	Guysboro	Cape Breton	Inverness	Richmond	Victoria
Mayflower	103·2	100·2	101·5	111·0	105·2	108·2
Blue Violet	130·2	132·5	131·2	126·9	132·9	131·1
Red Maple	129·6	126·3	133·9	141·7	137·0	146·0
Dandelion	130·0	125·2	130·2	125·8	134·7	134·2
Strawberry	120·6	130·2	129·2	129·4	135·5	134·4
Wild Red Cherry	146·8	148·2	151 9	146·0	149·2	152·7
Tall Buttercup	149·0	154·3	153·5	154·9	152·9	152·6
Indian Pear	143·6	146·5	144·9	136·0	146·0	148 6
Apple	154·2	152·0	155·6	153·6	161·4	159·5
Lilac	162·6	167·6	160·9	171·3	166·4	172·5
Average	134·28	138·30	139·28	139·66	142·12	143·98

In the counties of Antigonish, Guysboro and Queen's the figures given above are the averages of only five or six localities instead of the normal ten. In some of the counties the majority of the observers were observers for some time under the Botanical Club of Canada, and were thus more likely to know where to look for the earliest flowering as well as when to look for it. This element is sufficient to make the averages of such counties perhaps a day or two in advance of others, so that it would require a series of years to demonstrate the average phenological position of the counties. Then again, some of the counties may have had more than an average number of elevated stations, while others may have had a greater number of valley stations, which make a difference of a fraction of a day in the general average. The following series would be, perhaps, a better test of the phenological position of each county, provided, as mentioned before, the exact day when the flowering should be said to be "becoming common" could be determined by each observer.

THE AVERAGE DATES WHEN FLOWERING WAS REPORTED "BECOMING COMMON" IN EACH COUNTY OF THE PROVINCE OF NOVA SCOTIA DURING THE YEAR 1898.

PLANTS	Annapolis	Yarmouth	Hants	Kings	Digby	Shelburne
Mayflower	103·8	100·7	109·3	104·7	104·4	102·9
Blue Violet	130·3	126·5	131·2	133·1	132·9	128·7
Red Maple	130·2	129·1	127·0	129·2	134·8	131·5
Dandelion	130·1	126·4	133·2	134·4	127·1	129·8
Strawberry	131·3	130·6	133·5	136·5	132·1	135·4
Wild Red Cherry	142·0	146·9	145·8	146·9	150·9	150·5
Tall Buttercup	150·7	145·3	152·5	151·0	155·8	152·1
Indian Pear	140·0	144·9	144·5	143·7	143·7	145·1
Apple	147·2	152·5	151·5	151·5	150·5	153·2
Lilac	158·1	162·7	161·8	160·2	163·0	166·7
Average	136·37	136·56	139·03	139·12	139·52	139·56

PLANTS	Lunenburg	Pictou	Queens	Halifax	Colchester	Cumberland
Mayflower	105·5	111·6	112·0	107·2	110·5	111·7
Blue Violet	132·2	133·4	131·0	131·8	136·2	139·0
Red Maple	127·1	132·3	128·0	129·7	133·9	136·1
Dandelion	134·4	132·3	133·2	132·4	134·8	137·1
Strawberry	133·9	135·5	133·8	134·0	136·5	138·8
Wild Red Cherry	146·2	148·8	145·4	151·4	146·6	146·9
Tall Buttercup	158·0	149·6	157·2	156·5	156·8	155·7
Indian Pear	143·7	144·5	144·6	144·7	148·2	146·1
Apple	151·3	151·7	150·2	155·6	151·4	151·3
Lilac	164·8	159·3	165·0	167·7	160·2	162·5
Average	139·71	139·90	140·04	141·10	141·51	142·59

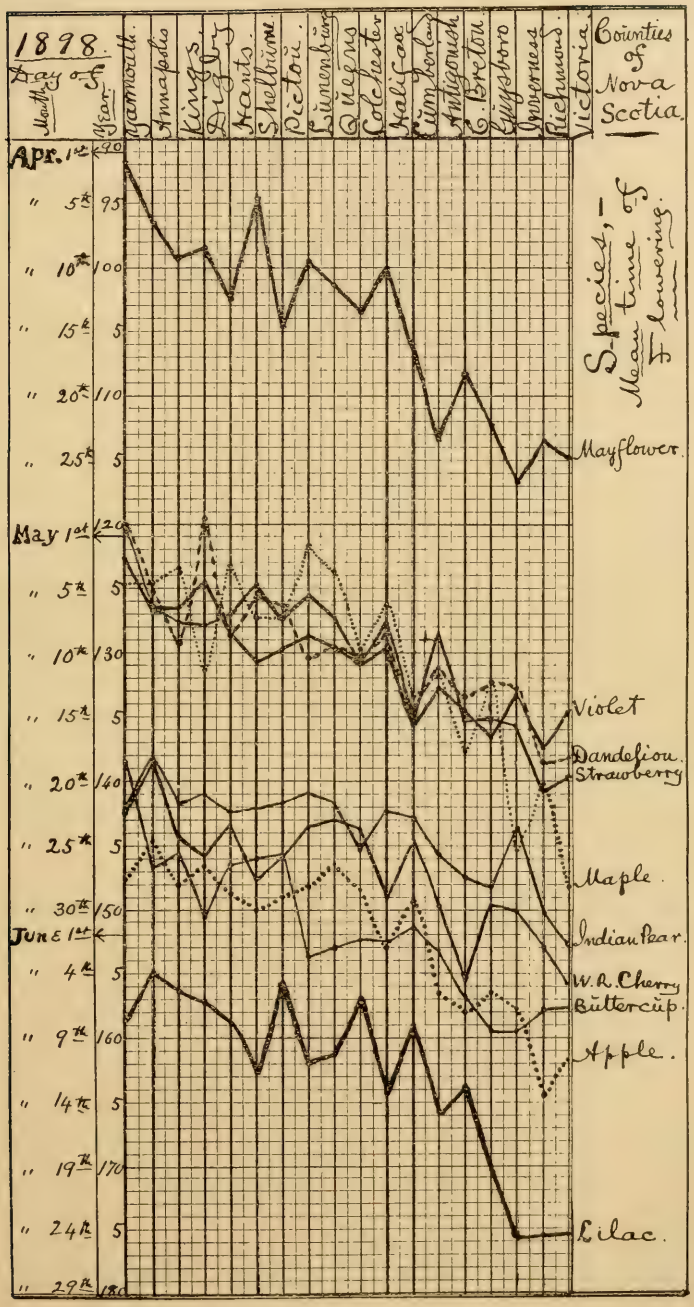
THE AVERAGE DATES WHEN FLOWERING WAS REPORTED "BECOMING COMMON"—*Continued.*

PLANTS	Antigonish	Cape Breton	Guysboro	Inverness	Richmond	Victoria
Mayflower	120·8	114·8	124·2	122·4	121·7	121·6
Blue Violet	135·6	137·9	141·2	139·4	142	138·3
Red Maple	131·2	141·6	138	149·0	143·2	150·4
Dandelion	132·6	136·5	139·2	139·9	142·4	142·5
Strawberry	136·8	141·2	140·5	142·0	145·9	145·3
Wild Red Cherry	152·8	158·7	151·5	154·2	156·9	159·1
Tall Buttercup	157·2	160·2	164·6	164·1	162·9	162·3
Indian Pear	147·8	150·1	149·8	151·3	154 4	157·3
Apple	158·8	160·5	161	162·2	167·6	164·2
Lilac	169·2	166·8	172·6	180·3	174·9	178·7
Average	144·58	146·83	148·26	150·48	151·19	151·97

Taking the average of these two series of dates for each county, and calling this average the date of the "full opening of summer," we find the date of the "full opening of summer" in the various counties of the province as follows for the year 1898 :—

COUNTY	Day of Year	Day of Month	COUNTY	Day of Year	Day of Month
Yarmouth	130·88	11 May	Colchester	137·23	18 May
Annapolis	132·22	13 "	Halifax	137 29	18 "
Kings	134·19	15 "	Cumberland	139·20	20 "
Digby	134·27	15 "	Antigonish	140·93	21 "
Hants	134·97	15 "	Cape Breton	143·05	24 "
Shelburne	135·13	16 "	Guysboro	143·28	24 "
Lunenburg	135·43	16 "	Inverness	145·07	26 "
Queens	135·72	16 "	Richmond	146·65	27 "
Pictou	135·91	16 "	Victoria	147·97	28 "

On the next page, curves indicating the average (in each county of the province) of the dates in each of the foregoing series, "When first seen" and "When becoming common," are given.


1898.
Day of Month
Day of Year
Yarmouth.
Annapolis
Kings.
Digby
Hants.
Shelburne
Victoria.
Lunenburg
Queens
Colchester
Halifax
Cumberland
Antigonish
C. Breton
Guysboro
Inverness
Richmond.
Victoria
Counties of Nova Scotia.
Species, — Mean time of Flowering.
Apr. 1st 90
" 5th 95
" 10th 100
" 15th 5
" 20th 110
" 25th 5
May 1st 120
" 5th 5
" 10th 130
" 15th 5
" 20th 140
" 25th 5
" 30th 150
June 1st
" 4th 5
" 9th 160
" 14th 5
" 19th 170
" 24th 5
" 29th 180
Mayflower.
Violet
Dandelion.
Strawberry
Maple.
Indian Pear.
W. R. Cherry
Buttercup.
Apple.
Lilac.

From New Brunswick no phenological observations on the regular schedule were received this year. The secretary for the province has sent in the following observations on a "Wild Garden," however.

OBSERVATIONS IN A WILD GARDEN.

By Geo. U. Hay, M.A., Ph.B., St. John.

The importance of examining from year to year the same wild plants confined within a limited area and exposed to similar climatic conditions induces me to make a few observations of an experiment which I have carried on for some years in a wild garden near St. John.

The experiment consists of the introduction of as many as possible of our native species of plants into a field some two acres in extent, with a view of showing at a glance a representative gathering of our flora, and incidentally the effects of changes brought about in transplanting to a different habitat, as well as making notes on times of coming into leaf, flower, and fruit of a considerable number of species having about the same position, exposure to sunlight and wind, temperature, and other climatic conditions from year to year. And not least, the gathering into one community of a large number of plants from every part of the province, with some admixture of foreign elements, presents to the botanist the opportunity of studying problems analogous to those which a city presents to the sociologist, a place where living organisms inhabiting the same locality, adapting themselves to different conditions, maintaining their ground against rivals or yielding to unfavourable conditions, may be viewed daily and some light be thrown on plant life and development.

The "garden" is situated about twelve miles from the city, near the St. John River, which it overlooks, on grounds sloping towards the north. The elevation is about fifty feet above the river. Nearly half of the ground has been cleared, giving an opportunity to test the horticultural capabilities of the land as well as to carry on a war of extirpation against weeds. An attempt was first made to secure a *modus vivendi* by assigning to the weeds a space in one corner of the garden where specimens were planted and labelled; but with a perversity characteristic of their tribe, they refused to grow under such conditions.

On the borders of the cleared space a few foreign shrubs and trees sent me by Dr. Saunders, of the Dominion Experimental Farm, and from the public gardens and park at Halifax, have been planted. These consist of representative species from northern Europe and western Canada, and will prove useful for comparison with similar native species,

from which they are kept separate. The wild part of the garden consists of a hill, on which heath plants, evergreens, and others requiring a light soil and exposure find a suitable habitat; a grove, where our chief forest trees and shrubs, ferns and other plants requiring shade are to be found, the deciduous trees prevailing, and giving to the soil each year a supply of leaf mold; and alluvial meadow, through which runs a stream which has deposited in the past material brought from the neighbouring hills. The stream and meadow are adapted for aquatic plants and those requiring rich intervale soil.

In this garden there have been about five hundred native species of flowering plants and ferns, many of which were *in situ,* while others had been planted during the last ten years ; of these about ten per cent have disappeared or failed to grow through lack of proper conditions or the perils incident to long transportation, as the transfer of plants has been made chiefly in the summer months; so that not quite one-half of the flowering plants of the province can be seen in this space of nearly two acres. But little progress has been made in planting the grasses, sedges, rushes, and aquatic plants. The results in regard to the latter are especially disappointing, although considerable labour has been expended on them. The at times turbulent little stream has shown no disposition to be led into quiet ponds or stretches of pool. It has even carried away—root, stem and branch—the plants placed too confidingly within the limits of its bed, and all attempts to secure its co-operation, or at least a passive non-resistance in the scheme, have resulted in failure.

There is a larger representation of ferns in the garden than of any other class of plants. Nearly all of the forty species and varieties found within the limits of the province were living and flourishing during the past summer. The trees and shrubs are also very well represented. Out of the eighty species found in the province, more than sixty are growing and in good condition, and in a short time I hope to have a complete representation of our forest trees and shrubs.

Little or no attempt has been made to put plants in rows or beds according to their classification, the chief aim being to provide a natural habitat and surroundings for each species as far as possible.

Observations in the garden have extended over a period of ten years, 1889 to 1898 inclusive. In the results recorded I have not hesitated to go outside the garden to make observations on plants more favourably situated for coming into leaf or bloom early, always choosing the same locality, and, in the case of perennials, the same plants from year to year.

I give below the record for the past two years made up to May 24th. In future seasons, with better opportunities and more time for observation, I hope to make the results more complete.

1897.

May 7-10.—Weather for past three weeks cold, with east winds and rain, with an occasional warm day. Hepatica, Adder's-tongue (only a few in flower), White Violet, Red Maple, Hazel (Corylus rostrata), Alders, Willows, Poplars, in full flower in shaded place,—in exposed places fading, with pollen shed; Butter wort (Pinguicula vulgaris) with leaves extended in rosettes. This plant, with such northern ferns as Woodsia hyberborea, W. glabella, Pellaea gracilis, and others, were brought from Restigouche, 200 miles farther north, the previous season, and were among the first in the garden to unfold their leaves and fronds.

May 14-19.—Adder's-tongue (in full bloom), Painted Trillium (a few), White Violet (abundant), Blue Violet (a few), Grove Anemone, Bell-wort, Gold-thread, Strawberry (beginning to flower), Mayflower (blooming in shade), Marsh Marigold.

May 21-25.—Bluets, Hobble-bush, June-berry, Purple Trillium, Dandelion, Ground Ivy.

May 30.—Nodding Trillium (Trillium cernuum), False Mitrewort (Tiarella cordifolia), Rhodora, Red Cherry, Elder, Dandelion, Strawberry.

1898.

April 23.—Season cold and backward, although the fine weather of February and March promised an early spring. Frost still in ground and cold east winds prevail. Mayflower (in bloom), Adder's-tongue with leaves above ground.

May 7.—Hepatica and Red Maple (in full bloom), Alder and Poplar catkins shedding pollen, a few Adder's-tongue, Blue and White Violets (in bloom).

May 14.—All the flowers named above in full bloom, with Bellwort, Grove Anemone, Bloodroot, Leatherwood (Dirca palustris).

May 20.—Purple and Painted Trilliums, June-berry, Service-berry, Ground Ivy, Gold-thread, Spring-beauty, Marsh Marigold, Blue Cohosh (Caulophyllon thalictroides), Hobble-bush. Trees just leaved out: White Birch, Amelanchier, Poplars, Red Maple, Lilacs, Mountain Ash, Red and Black Cherry. Buds just breaking: Horse Chestnut, Black Ash.

May 24.—First Red Cherry blossoms, Gray Birch (Betula populifolia), just coming into leaf, Red Oak, Linden (Tilia Americana), Elm, Sumach (Rhus typhina) bursting their buds.

No reports have been received from the province of Quebec for the year. Botanical work in the universities and in the Natural History Society of Montreal appears to be as flourishing as usual.

From Ontario only one schedule of phenological observations has been received—from Miss Hollingworth, of Muskoka. Such observations are always being made in connection with the Dominion Experimental Farm, but have not been received at date.

In addition to his work as the Botanist of the Geological Survey of Canada, the President has worked up the Cryptogamic Flora of Ottawa, which has been published in the *Ottawa Naturalist*, volumes XI. and XII., October, 1897, to September, 1898.

James M. Macoun, Curator of the Herbarium, is continuing the publication of his "Contributions from the Herbarium of the Geological Survey of Canada in the *Canadian Record of Science* and in the *Ottawa Naturalist.*

New work has been opened out in some of these papers for our botanists in the fuller study of our so-called polymorphous species. Some of these would appear, from Mr. Macoun's investigations, to be really groups of closely related species. He makes the following suggestions for the information of those interested :

"Almost any of the larger genera will repay special study, but those from which good results are sure to be obtained by local workers are *Antennaria* and *Viola.*

There is no *Antennaria plantaginifolia* in Canada, but there are at least five species which have been passing under that name. We have three at Ottawa. In collecting this genus it is necessary to secure young flowering plants of both sexes if possible. The place should then be marked carefully so that mature plants may be got from the locality.

The violets of the *cucullata* group have not been worked up in Canada except in this vicinity, where I have already got six good species out of *V. cucullata,* with one or two more to come.

There are at least four species in Canadian *V. blanda.* Violets *must* be collected in both fruit and flower, as the apetalous flowers and the fruit are the most important parts. The flower should be collected as early as possible, then again a week or ten days later when the apetalous flowers show; then in fruit, and later in summer foliage. Some species continue to flower underground all summer, while others last but a short time."

Full descriptions of the Ottawa violets referred to, with excellent plates, are published by Mr. Macoun in the *Ottawa Naturalist* of January, 1899, Vol. XII. Reference has already been made to the new violet, *Viola Watsoni,* Greene, found by L. W. Weston in Prince Edward Island. Another new species was discovered by Mr. Jacobs in British Columbia.

From Manitoba no report has come at the date of this compilation.

From Assiniboia, Mr. Donnelly, of Pheasant Forks, sends in a schedule of observations.

From Alberta, Mr. Willing, of Sylvan Glade, Olds, sends in a large number of observations, most of which cannot be published at present on account of their being outside of the schedule list to which our tabulation is adapted.

From British Columbia, the secretary for the province reports that the work of the club has been brought before the teachers of the public schools, who are taking a greater interest in botany. At attempt is now being made to secure observers at several points in the Fraser Valley and in Kootenay. Mr. Lawton, of the British Columbia branch of the club, is making collections in Alaska. Mr. Jacobs was the discoverer of a new species of violet according to the determination of Professor Macoun. Mr. Hill, of New Westminster, has succeeded in getting *Erythronium Smithii*, indigenous to the west coast of Vancouver Island, to bloom in his garden. Mr. Henry says he was interested last spring in observing the "spontaneous appearance of *Erythronium giganteum*, several plants, in Stanley Park, Vancouver. It certainly has not grown there of recent years, nor, as far as I know, in this vicinity. On May 14th I collected several beautiful specimens of *Fragaria Chilensis* with *red* blossoms. A *Trillium ovatum*, perfectly symmetrical in 2's, 2 leaves, 2 sepals, 2 petals, 4 stamens, 2 styles, was sent me from Boundary Bay. Our common *Botrychium ternatum* has been separated as a new species by Professor Underwood—*B. occidentale*. A curious plant of *Digitalis purpurea*, a species which has thoroughly established itself here, was found by Mr. Hill. The half-dozen flower spikes were each abruptly terminated by a monstrous flower, so that the plant presented a very striking appearance. I had one spike photographed and inclose proof (unfortunately I can find no finished print). As, however, I saw the same thing in the Botanical Gardens, Lincoln Park, Chicago, it would not appear to be the freak we had supposed."

Below I present the instructions and blanks sent out for the recording of phenological observations in public schools in Nova Scotia, as they were the instructions also sent to the members of the club throughout the Dominion, together with the supplementary blank for the western provinces of the Dominion. Then follow the names of the observers belonging to the club and their observations in tabular form.

A. H. MacKay,
Secretary Botanical Club of Canada.

[*For the Teacher in the School Section.*]

Local "Nature" Observations.

This sheet is provided for the purpose of aiding teachers to interest their pupils in observing the times of the regular procession of natural phenomena each season. First, it may help the teacher in doing some of the "Nature" lesson work in the course of study: secondly, it may aid in procuring valuable information for the locality and province. Two copies are provided for each teacher who wishes to conduct such observations, *one* to be attached to the school register, so as to be preserved as the property of the section for reference from year to year; the *other* to be sent in with the return to the inspector, who will transmit it to the Superintendent for examination, and compilation if desirable.

What is desired is to have recorded in these forms, the dates of the *first* leafing, flowering and fruiting of plants and trees; the *first* appearance in the locality of birds migrating north in spring or south in autumn, etc. While the objects specified here are given so as to enable comparison to be made between the different sections of the province, it is very desirable that all other local phenomena of a similar kind be recorded. Each locality has a *flora, fauna, climate,* etc., more or less distinctly its own; and the more common trees, shrubs, plants, crops, etc., are those which will be most valuable from a local point of view in comparing the characters of a series of seasons.

Teachers will find it one of the most convenient means for the stimulation of pupils in observing all natural phenomena when going *to* and *from* school, some of the pupils radiating as far as two miles from the school room. The "nature study" under these conditions would be mainly undertaken at the most convenient time, thus not encroaching on school time; while on the other hand it will tend to break up the monotony of school travel, fill an idle and wearisome hour with interest, and be one of the most valuable forms of educational discipline. The eyes of a whole school daily passing over a whole school district would let very little escape notice, especially if the first observer of each annually recurring phenomenon would receive credit as the first observer of it for the year. The observations will be accurate, as the facts will have to be demonstrated by the most undoubted evidence, such as the bringing of the specimens to the school when possible or necessary.

To all observers the following most important, most essential principles of recording are emphasized: Better *no date,* NO RECORD, than a WRONG ONE or a DOUBTFUL one. Sports out of season due to very local

conditions not common to at least a small field, should not be recorded except parenthetically. The date to be recorded for the purposes of compilation with those of other localities should be the *first* of the *many* of its kind following immediately after, etc. For instance, a butterfly emerging from its chrysalis in a sheltered cranny by a southern window in January would not be an indication of the general climate, but of the peculiarly heated nook in which the chrysalis was sheltered; nor would a flower in a semi-artificial, warm shelter, give the date required. When these sports out of season occur, they might also be recorded, but within a parenthesis to indicate the peculiarity of some of the conditions affecting their early appearance.

After the trial of other plans it is now recommended that these schedules be sent to the inspector only once a year, and with the annual school returns in July, containing the observations made during the whole school year, and back as far as the preceding July (if possible) when the schedule of the previous school year was necessarily completed and sent in.

A duplicate copy of the schedule of observations should be securely attached to the school register for the year, so that the series of annual observations may be preserved in each locality.

Remember to fill in carefully and distinctly the date and locality in every blank at the head of the schedule on the next page; for if either the date or the locality or the name of the responsible compiler should be omitted (as in some cases it has been), the whole paper is worthless and will be burned instead of being bound up in the volume of the Phenological Observations of Nova Scotia.

The post office address to be filled in at the top of the schedule is meant to be that one nearest to the school house or the centre of the section or locality which the observations represent, for the postal maps of the province indicate the exact geographical position of each post office, while the locations of many school sections are not indicated on any maps.

PHENOLOGICAL OBSERVATIONS, NOVA SCOTIA, 189

For the year ending July, 189

School Section.... .....No.....District.... .....County.....

The Teacher, or the Responsible Compiler, } .....Post Office.. .....

	When First Seen.	When becoming common.
(WILD PLANTS, ETC.)		
1. Alder (Alnus incana), catkins shedding pollen.....		
2. Aspen (Populus tremuloides), " "		
3. Mayflower (Epigæa repens), flowering.....		
4. Violet, Blue (Viola cucullata), "		
5. Violet, White, (V. blanda), "		
6. Red Maple (Acer rubrum), "		
7. Bluets (Houstonia caerulia), "		
8. Field Horsetail (Equisetum arvense), shedding spores....		
9. Dandelion (Taraxacum officinale), flowering.....		
10. Adder's Tongue Lily (Erythronium), "		
11. Hepatica (H. triloba, etc.), "		
12. Gold Thread (Coptis trifolia), "		
13. Strawberry (Fragaria Virginiana), "		
14. " " fruit ripe.....		
15. Wild Red Cherry (Prunus Pennsylvanica), flowering....		
16. " " " fruit ripe.....		
17. Blueberry (Vaccinium, Can. and Penn.), flowering.....		
18. " " " " fruit ripe.....		
19. Tall Buttercup (Ranunculus acris), flowering.....		
20. Creeping Buttercup (R. repens), "		
21. Clintonia (Clintonia borealis), "		
22. Painted Trillium (Erythrocarpum), "		
23. Star Flower (Trientalis Americana), "		
24. Lady's Slipper (Cypripedium acaule), "		
25. Marsh Calla (Calla palustris). "		
26. Indian Pear (Amelanchier Canadensis), "		
27. " " " fruit ripe.....		
28. Common Raspberry (Rubus strigosus), flowering.....		
29. " " fruit ripe.....		
30. High Blackberry (Rubus villosus), flowering.....		
31. " " fruit ripe.....		
32. Pale Laurel (Kalmia glauca), flowering.....		
33. Sheep Laurel (K. angustifolia), "		
34. Pigeon Berry (Cornus Canadensis), flowering.....		
35. " " fruit ripe.....		
36. Blue-eyed Grass (Sisyrinchium), flowering.....		
37. Twinflower (Linnæa borealis), "		
38. Butter and Eggs (Linaria Canadensis), flowering.....		
39. Yellow Rattle (Rhinanthus), "		
40. Pitcher Plant (Sarracenia). "		
41. Heal-All (Brunella vulgaris), "		
42. Great Willow-Herb (Epilobium angustifolium), flowering.		

PHENOLOGICAL OBSERVATIONS, NOVA SCOTIA—(*Continued*)

	When First Seen.	When becoming common.
(WILD PLANTS, &c.—*Continued.*)		
43. Common Wild Rose (Rosa lucida), flowering		
44. Common St. John's Wort (Hypericum perfoliatum), flowering		
45. Fall Dandelion (Leontodon autumnale), flowering		
(CULTIVATED PLANTS, ETC.)		
46. Cherry (Prunus cerasus), flowering		
47. " " fruit ripe		
48. English Hawthorn (Cratægus oxyacantha), flowering		
49. American Hawthorns (Cratægus ——) "		
50. Plum (Prunus domestica), "		
51. Apple, early flowering, (Pyrus), "		
52. " late " " "		
53. Red Currant (Ribes rubrum), flowering		
54. " " fruit ripe		
55. Black Currant (R. nigrum), flowering		
56. " " fruit ripe		
57. Lilac (Syringa vulgaris), flowering		
58. Potato (Solanum tuberosum), flowering		
59. Timothy (Phleum pratense), "		
60. White Clover (Trifolium repens), "		
61. Red Clover (T. pratense), "		
62. Wheat (Triticum vulgare), "		
63. Oats (Avena sativa), "		
64. Buckwheat (Fagopyrum esculentum), flowering		
65. (a) Earliest and (b) latest full leafing of Trees, &c., in Spring	(a)	(b)
(FARMING OPERATIONS, ETC.)		
66. Ploughing begun		
67. Sowing		
68. Planting of Potatoes		
69. Shearing of Sheep		
70. Hay Cutting		
71. Grain Cutting		
72. Potato Digging		
(METEOROLOGICAL PHENOMENA.	(a)	(b)
73. Opening of (a) Rivers, (b) Lakes without currents		
74. Last Snow (a) to whiten ground, (b) to fly in air		
75. Last Spring Frost, (a) "hard," (b) "hoar."		
76. Water in Streams, Rivers &c., (a) highest, (b) lowest		
77. First Autumn Frost, (a) "hoar," (b) "hard."		
78. First Snow (a) to fly in air, (b) to whiten ground		

PHENOLOGICAL OBSERVATIONS, NOVA SCOTIA—(*Continued.*)

	Going North or coming in Spring.	Going South or leaving in Fall.
(METEOROLOGICAL PHENOMENA.—*Continued.*)		
7. Closing of (a) Lakes without currents, (b) Rivers	*a*	*b*
80. Number of Thunder Storms (with dates of each)		

Jan.....Feb .....Mar .....Apr..... ...May.....
.. ..June..... .....
July ....Aug.....
.....Sept..... .....Oct.....Nov.....Dec.....

(MIGRATION OF BIRDS, ETC.)		
81. Wild Duck migrating		
82. Wild Geese migrating		
83. Song Sparrow (Melospiza fasciata)		
84. American Robin (Turdus migratorius)		
85. Slate-coloured Snow Bird (Junco hiemalis)		
86. Spotted Sandpiper (Actitis macularia)		
87. Meadow Lark (Sturnella magna)		
88. Kingfisher (Ceryle Alcyon)		
89. Yellow crowned Warbler (Dendrœca coronata)		
90. Summer Yellow Bird (Dendrœca aestiva)		
91. White Throated Sparrow (Zonotrichia alba)		
92. Humming Bird (Trochilus colubris)		
93. King Bird (Tyrannus Carolinensis)		
94. Bobolink (Dolychonyx oryzivorus)		
95. American Gold Finch (Spinis tristis)		
96. American Redstart (Setophaga ruticilla)		
97. Cedar Waxwing (Ampelis cedrorum)		
98. Night Hawk (Chordeiles Virginianus)		
99. Piping of Frogs		
100. Appearance of Snakes		

(OTHER OBSERVATIONS AND REMARKS.)

The Rarer Eastern and the Western Species of the original Dominion Schedule, which are supplementary to the Nova Scotia list.

PHENOLOGICAL OBSERVATIONS, CANADA, 18

P. O..... County ..... Prov.....
Name of Observer.....
Date of mailing filled schedule.....

	When First Seen.	When becoming common
a. Spring Anemone (*A. patens*, var. *N.*). Prairies, fl.....		
b. Salmon berry (*Rubus spectabilis*) B.C., fl.....		
c. " " " fruiting.....		
d. Ash-leaved Maple (*Acer Negundo*). Ont. and W., fl.....		
e. Wild Plum (*Prunus Americana*). East, fl.....		
f. Blackberry (R. occidentalis and leuc.), fl.....		
g. " " fruit.....		
h. Western Dogwood (Cornus Nuttallii). B.C., fl.....		
i. Oaks (black and white), fl.....		
j. Song Sparrow (*M. Montana*) arrived		
k. Robin (*M. propinqua*). B.C. "		
l. Blue Bird (*Sialia sialis*). Central, arrived.....		
m. Junco (*J. annectens and Oregonus*). B.C. arrived.....		
n. Red-winged Blackbird (*Ag. phœniceus*) "		
o. Meadow lark (*Sturnella neglecta*). Man. "		
p. Humming-bird (*T. rufus and Cal.*). West "		
q. Night-hawk (*Chordeiles Henryei*). B.C. "		
r. Dates and duration of droughts.....		

OTHER OBSERVATIONS, &c.

PHENOLOGICAL OBSERVATIONS, CANADA, 1898.

Stations and Names of the Observers.

Nova Scotia.

Berwick, Kings Co.—Miss Ida Parker.
Windsor, Hants Co.—Miss Antoinette Forbes, B.A.
Halifax City.—Mr. Harry Piers.
Musquodoboit Harbour, Halifax Co.—Rev. James Rosborough.
Wallace, Cumberland Co.—Miss Mary E. Charman.
Pictou, Pictou Co.—Mr. C. L. Moore, B.A.
New Glasgow, Pictou Co.—Miss Maria Cavanagh.
Port Hawkesbury, Inverness Co.—Mrs. G. Ormond Forsyth.

Prince Edward Island.

Charlottetown.—Principal John MacSwain.

Ontario.

Beatrice, Muskoka.—Miss Alice Hollingworth.

Assiniboia.

Pheasant Forks—Mr. Thomas Donnelly.

Alberta.

Olds.—Mr. T. N. Willing.

British Columbia.

Vancouver.—Mr. J. K. Henry, B.A.

PHENOLOGICAL OBSERVATIONS, CANADA, 1898.

Day of the year, 1898, corresponding to the last day of each month.

January	31	July	212
February	59	August	243
March	90	September	273
April	120	October	304
May	151	November	334
June	181	December	365

Number.		Berwick, N.S.	Windsor, N.S.	Halifax, N. S.
1	Alder	95	106	107
2	Aspen	128	.....	107
3	Mayflower	91	78	.....
4	Blue Violet	127	113	.....
5	White Violet	120	.....	.....
6	Red Maple	.....	108	125
7	Bluets (Houstonia)	.....	.....	128
8	Equisetum	.....	119	.....
9	Dandelion	123	106	125
10	Adder's Tongue Lily	.....	.....	.....
11	Hepatica	.....	.....	.....
12	Gold Thread	131	.....	141
13	Strawberry	123	120	129
14	" fruit ripe	159	155	164
15	Wild Red Cherry	.....	140	144
16	" " fruit ripe	.....	.....	.....
17	Blueberry	132	121	.....
18	" fruit ripe	196	.....	204
19	Ranunculus acris	142	.....	156
20	" repens	.....	.....	.....
21	Clintonia	139	.....	151
22	Trillium	139	136	....
23	Trientalis	140	149	.....
24	Cypripedium	149	.....	.....
25	Calla	155	.....	.....
26	Indian Pear	138	132	140
27	" " fruit	.....	.....	.....

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number.	Musquodoboit Harbour, N. S.	Wallace, N. S.	Pictou, N.S.	New Glasgow, N. S.	Port Hawkesbury, N. S.	Charlottetown, P. E. I.	Muskoka, Ont.	Pheasant Forks, Assa.	Olds, Alberta.	Vancouver, B. C.
1	.....	87	121	.....	.....	140	110	.....	.....	60
2	.....	.....	.....	121	.....	135	113	133	.....	.....
3	96	101	86	94	106	105	.....	.....	.....	.....
4	124	135	125	125	144	.....	116	140	.....	.....
5	122	127	125	.....	144	.....	121	.....	.....	.....
6	.....	.....	123	121	132	.....	107	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	.....	143	113	124	.....	.....	130	.....	.....	.....
9	135	131	125	118	132	135	121	150	153	84
10	.....	.....	126	.....	.....	.....	121	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	132	140	136	140	144	.....	140	.....	.....	.....
13	128	131	128	113	134	142	130	142	142	96
14	174	163	168	158	182	.....	167	175	173	144
15	.....	138	147	147	.....	.....	136	161	.....	110
16	.....	.....	.....	.....	.....	.....	192	.....	.....	.....
17	.....	142	179	.....	.....	.....	129	.....	.....	.....
18	.....	202	.....	.....	.....	.....	.....	.....	.....	.....
19	154	152	.....	139	.....	.....	152	.....	.....	.....
20	.....	.....	.....	.....	163	.....	.....	.....	.....	.....
21	152	.....	148	.....	.....	.....	.....	.....	.....	.....
22	150	.....	145	.....	.....	.....	134	.....	.....	.....
23	.....	.....	156	.....	.....	.....	157	.....	.....	.....
24	156	.....	156	.....	.....	.....	.....	.....	.....	.....
25	.....	.....	.....	.....	.....	.....	166	.....	.....	.....
26	137	.....	143	141	154	.....	129	142	.....	118
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number.	Day of the year, 1898, corresponding to the last day of each month.	Berwick, N. S.	Windsor, N. S.	Halifax, N. S.
	January.... 31 July....212 February.... 59 August....243 March.... 90 September....273 April....120 October....304 May....151 November....334 June....181 December.... 365			
28	Raspberry	149	155	.....
29	" fruit ripe	.....	.....	.....
30	Blackberry	166	.....	179
31	" fruit ripe	239	.....	.....
32	Pale Laurel	.....	.....	.....
33	Sheep Laurel	144	.....	.....
34	Pigeonberry	138	134	148
35	" fruit ripe	.....	.....	.....
36	Blue-eyed Grass	157	.....	.....
37	Linnæa	.....	.....	.....
38	Linaria	.....	.....	.....
39	Rhinanthus	.....	.....	.....
40	Sarracenia	.....	.....	.....
41	Brunella	180	.....	173
42	Epilobium	.....	.....	192
43	Rosa lucida	172	.....	197
44	Hypericum	187	.....	195
45	Leontodon	211	156	178
46	Cherry (cult.) fl	138	133	.....
47	" " fruit	196	.....	.....
48	English Hawthorn	.....	.....	.....
49	American Hawthorn	.....	.....	.....
50	Plum (cultivated)	143	134	.....
51	Apple, (early) fl	.....	140	153
52	" (late) fl	145	.....	.....
	Currant, red, fl	141	134	.....
	" " fr	197	.....	.....

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number.	Musquodoboit Harbour, N. S.	Wallace, N. S.	Pictou, N.S.	New Glasgow, N. S.	Port Hawkesbury, N. S.	Charlottetown, P. E. I.	Muskoka, O.	Pheasant Forks, Assa.	Olds, Alberta.	Vancouver, B. C.
28	172	.....	.....	.....	.....	.....	.....	171	.....	.....
29	203	202	.....	.....	213	.....	197	.....	.....	.....
30	.....	.....	176	.....	182	.....	165	.....	.....	113
31	.....	.....	.....	.....	230	.....	.....	.....	.....	.....
32	169	157	.....	.....	.....	.....	152	.....	.....	.....
33	177	173	182	.....	.....	.....	.....	.....	.....	.....
34	168	157	158	.....	.....	.....	158	.....	.....	.....
35	.....	203	.....	.....	.....	.....	.....	.....	.....	.....
36	.....	149	159	161	177	.....	155	171	.....	.....
37	.....	173	175	.....	.....	.....	158	.....	.....	.....
38	.....	.....	194	211	.....	.....	.....	.....	.....	.....
39	179	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	174	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	179	.....	175	.....	.....	.....	169	.....	.....	.....
42	200	195	191	.....	.....	.....	189	.....	.....	.....
43	.....	.....	.....	.....	182	.....	197	.....	.....	.....
44	.....	.....	201	192	.....	.....	165	.....	.....	.....
45	.....	.....	200	.....	176	.....	298	.....	.....	.....
46	144	147	.....	144	147	155	.....	.....	.....	102
47	.....	203	.....	.....	.....	.....	.....	.....	.....	155
48	.....	.....	.....	162	.....	.....	.....	.....	.....	.....
49	.....	.....	164	152	.....	.....	157	161	.....	133
50	.....	148	145	144	155	.....	136	.....	.....	.....
51	.....	147	.....	147	155	152	146	.....	.....	116
52	.....	.....	.....	149	.....	.....	.....	.....	.....	.....
53	145	140	.....	.....	147	.....	138	146	.....	.....
54	197	200	.....	.....	213	.....	189	.....	.....	.....

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number.	Day of the year, 1898, corresponding to the last day of each month.	Berwick, N. S.	Windsor, N. S.	Halifax, N. S.
	January ... 31 July ... 212 February ... 59 August ... 243 March ... 90 September ... 273 April ... 120 October ... 304 May ... 151 November ... 334 June ... 181 December ... 365			
55	Currant, black, fl			
56	" " fruit			
57	Lilac, fl	153	142	163
58	Potato, flower	180		
59	Timothy, flower			153
60	Clover, white, fl	135	148	163
61	" red, fl	153	140	156
62	Wheat, fl			
63	Oats, fl			
64	Buckwheat, fl			
65a	Leafing of trees			
65b	Latest leafing			
66	Ploughing			
67	Sowing			
68	Planting Potatoes			
69	Sheep Shearing	143	141	
70	Hay cutting			130
71	Grain-cutting			223
72	Potato-digging			
73a	Rivers opening			
73b	Lakes opening			
74a	Ground Snow, Spring		117	
74b	Air " "			
75a	Hard Frost "			
75b	Hoar " "	168		
76a	Streams, highest			
76b	" lowest			

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number.	Musquodoboit Harbour, N. S.	Wallace, N. S.	Pictou, N.S.	New Glasgow, N. S.	Port Hawkesbury, N.S.	Charlottetown, P. E. I.	Muskoka, Ont.	Pheasant Forks, Assa.	Olds, Alberta.	Vancouver, B. C.
55	.....	.....	.....	.....	155	.....	138	148	.....	.....
56	.....	199	.....	.....	.....	.....	193	.....	.....	123
57	160	157	160	151	.....	162	147	182	.....	.....
53	.....	.....	.....	.....	191	.....	179	.....	.....	.....
59	.....	.....	.....	191	202	.....	.....	.....	.....	.....
60	.....	156	163	153	176	.....	158	.....	.....	.....
61	.....	156	164	153	163	.....	158	.....	.....	.....
62	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
63	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
64	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
65a	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
65b	.....	.....	.....	.....	.....	.....	139	.....	.....	.....
66	.....	127	.....	.....	.....	.....	100	.....	.....	.....
67	.....	143	.....	.....	.....	126	106	122	.....	.....
68	.....	139	.....	.....	130	.....	145	137	.....	.....
69	.....	136	.....	.....	130	.....	131	156	.....	.....
70	.....	.....	.....	.....	202	.....	189	200	.....	.....
71	.....	.....	.....	.....	.....	231	220	222	.....	.....
72	.....	269	.....	.....	.....	.....	268	283	.....	.....
73a	.....	66	.....	79	.....	94	.....	110	.....	.....
73b	.....	87	.....	82	107	.....	.....	.....	.....	.....
74a	116	116	.....	117	96	.....	109	.....	118	.....
74b	.....	.....	.....	.....	116	.....	109	.....	119	.....
75a	.....	.....	.....	.....	.....	130	77	165	.....	119
75b	.....	.....	.....	161	.....	.....	108	.....	137	.....
76a	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
76b	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number.	Day of the year, 1898, corresponding to the last day of each month.	Berwick, N. S.	Windsor, N. S.	Halifax, N. S.
	January 31, February 59, March 90, April 120, May 151, June 181, July 212, August 243, September 273, October 304, November 334, December 365			
77a	Hoar Frost, Autumn	255	.....	255
77b	Hard " "	.....	.....	331
78a	Air Snow "	.....	.....	.....
78b	Ground Snow "	.....	.....	.....
79a	Lakes closing	.....	.....	.....
79b	Rivers closing	.....	.....	.....
80	Thunder	.....	.....	.....
		.....	.....	.....
		106	105	.....
		.....	140	.....
		.....	.....	182
		.....	.....	.....
		.....	.....	.....
		.....	.....	.....
		.....	.....	.....
		.....	.....	.....
		.....	.....	.....
		.....	.....	.....
		.....	.....	.....
		.....	.....	.....
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		.....	.....	.....
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		.....	.....	.....
		.....	.....	.....

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number.	Musquodoboit Harbour, N.S.	Wallace, N. S.	Pictou, N.S.	New Glasgow, N. S.	Port Hawkesbury, N. S.	Charlottetown, P. E. I.	Muskoka, O.	Pheasant Forks, Man.	Olds, Alberta	Vancouver, B. C.
77a	.....	268	.....	.....	240	.....	316	.....	241	.....
77b	.....	283	.....	283	305	285	254	251	.....	.....
78a	316	.....	.....	.....	264	.....	287	.....	246	.....
78b	319	.....	.....	319	283	315	290	.....	273	.....
79a	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
79b	.....	.....	.....	343	.....	363	.....	319	.....	.....
80	23	.....	.....	.....	.....	.....	.....	.....	.....	.....
	.....	.....	.....	.....	43	.....	.....	.....	.....	.....
	.....	.....	.....	.....	77	.....	75	.....	116	.....
	106	.....	.....	.....	159	.....	131	122	130	.....
	182	182	.....	182	163	182	149	151	142	.....
	.....	183	.....	184	176	.....	152	153	158	.....
	.....	184	.....	185	182	.....	158	163	160	.....
	.....	.....	.....	.....	.....	185	175	171	170	.....
	.....	.....	.....	.....	.....	.....	181	177	171	.....
	.....	.....	.....	.....	.....	.....	189	182	172	.....
	.....	.....	.....	.....	.....	.....	199	183	175	.....
	.....	.....	.....	.....	.....	.....	.....	191	178	.....
	.....	.....	.....	.....	.....	.....	.....	198	179	.....
	.....	.....	.....	.....	.....	.....	.....	.....	180	.....
	.....	.....	.....	.....	.....	.....	.....	.....	182	.....
	.....	.....	.....	.....	.....	.....	.....	.....	183	.....
	.....	.....	.....	.....	.....	.....	.....	.....	185	.....
	.....	.....	.....	.....	.....	.....	.....	.....	186	.....
	.....	.....	.....	.....	.....	.....	.....	.....	192	.....
	.....	.....	.....	.....	.....	.....	.....	.....	193	.....
	.....	.....	.....	.....	.....	.....	.....	.....	197	.....

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number.	Day of the year, 1898, corresponding to the last day of each month.	Berwick, N. S.	Windsor, N.S.	Halifax, N. S.
	January 31, February 59, March 90, April 120, May 151, June 181, July 212, August 243, September 273, October 304, November 334, December 365			
80	Thunder			
		227		235
		237		237
		248		
81	Wild Ducks			
82	Wild Geese, moving north	75		62
	" " south			
83	Song Sparrow	71		73
84	American Robin	67		65
85	Junco	74		84
86	Spotted Sand-piper			143
87	Meadow-lark			

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number.	Musquodoboit Harbour, N. S.	Wallace, N. S.	Pictou, N.S.	New Glasgow, N. S.	Port Hawkesbury, N. S.	Charlottetown, P. E. I.	Muskoka, O.	Pheasant Forks, Assa.	Olds, Alberta	Vancouver, B. C.
80	.....	.....	.....	.....	.....	.....	.....	.....	199	.....
	235	221	.....	218	201	212	200	204	202	.....
	.....	229	.....	.....	214	221	209	205	203	.....
	.....	.....	.....	.....	.....	.....	.....	.....	206	.....
	.....	.....	.....	.....	.....	.....	.....	.....	209	.....
	.....	.....	.....	.....	.....	.....	.....	212	210	.....
	.....	.....	.....	.....	221	.....	215	215	215	.....
	.....	.....	.....	.....	.....	.....	.....	220	221	.....
	.....	.....	.....	.....	.....	.....	.....	.....	223	.....
	.....	.....	.....	.....	.....	.....	224	225	224	.....
	.....	.....	.....	.....	.....	.....	.....	226	226	.....
	.....	.....	.....	.....	.....	.....	227	231	232	.....
	.....	234	.....	.....	233	.....	.....	232	233	.....
	237	.....	.....	237	237	236	234	.....	238	.....
	.....	247	.....	238	.....	.....	239	245	246	.....
	.....	248	.....	247	.....	248	.....	.....	262	.....
	.....	.....	.....	.....	.....	259	250	266	263	.....
	270	265	.....	.....	.....	.....	258	288	265	.....
	303	332	.....	.....	303	.....	276	.....	314	.....
81	.....	.....	.....	.....	.....	.....	.....	103	96	.....
82	.....	72	74	86	.....	73	.....	95	96	.....
	.....	.....	.....	.....	.....	.....	*300	.....	*276	.....
83	.....	.....	.....	.....	66	78	78	.....	84	.....
84	.....	74	.....	.....	26	93	.....	108	100	.....
85	.....	85	.....	.....	.....	90	.....	95	.....	.....
86	.....	.....	.....	.....	132	.....	.....	.....	.....	.....
87	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number	Day of the year, 1898, corresponding to the last day of each month.	Berwick, N.S.	Windsor, N.S.	Halifax, N.S.
	January .... 31 July .... 212 February .... 59 August .... 243 March .... 90 September .... 273 April .... 120 October .... 304 May .... 151 November .... 334 June .... 181 December 365			
88	Kingfisher			129
89	Yellow-crowned Warbler			
90	Summer Yellow bird	130		
91	White-throated Sparrow			126
92	Humming-bird	141	134	
93	Kingbird			142
94	Bobolink	124	134	
95	American Goldfinch	136		
96	American Redstart			151
97	Cedar Waxwing			
98	Night Hawk	145		144
99	Piping Frogs	89		104
100	Snakes, seen	129		

PHENOLOGICAL OBSERVATIONS, CANADA, 1898—*Continued.*

Number	Musquodoboit Harbour, N.S.	Wallace, N.S.	Pictou, N.S.	New Glasgow, N.S.	Port Hawkesbury, N.S.	Charlottetown, P. E. I.	Muskoka, Ont.	Pheasant Forks, Assa.	Olds, Alberta	Vancouver, B.C.
88	.....	.....	.....	.....	132	.....	.....	.....	.....	.....
89	.....	.....	.....	.....	111	.....	.....	.....	.....	.....
90	.....	.....	.....	135	130	.....	.....	.....	.....	.....
91	.....	.....	.....	.....	.....	142	.....	.....	.....	.....
92	142	144	.....	155	145	.....	136	143	.....	.....
93	.....	.....	.....	.....	147	.....	.....	.....	.....	.....
94	.....	.....	.....	.....	155	.....	.....	.....	.....	.....
95	.....	.....	.....	.....	144	.....	.....	.....	.....	.....
96	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
97	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
98	.....	.....	.....	.....	202	147	146	145	.....	.....
99	.....	106	100	.....	110	107	98	112	106	41
100	.....	.....	.....	.....	132	.....	100	118	.....	.....

Officers of the Botanical Club of Canada, 1898.

President—John Macoun, M.A., F.L.S., Ottawa.
General Secretary-Treasurer—A. H. MacKay, LL.D., Halifax.

Secretaries for the several Provinces :

Newfoundland—Rev. A. C. Waghorne, Bay of Islands.
Prince Edward Island—Principal John MacSwain, Charlottetown.
Nova Scotia—Dr. A. H. MacKay (General Sec.-Treas.), Halifax.
New Brunswick—George U. Hay, M.A., Ph.B., St. John.
Quebec—Prof. D. P. Penhallow, B.Sc., McGill University, Montreal.
Ontario—Principal William Scott, B.A., Normal School, Toronto. Toronto.
Manitoba—Rev. W. A. Burman, B.D., Winnipeg.
Assiniboia—Thomas R. Donnelly, Esq., Pheasant Forks.
Alberta—T. N. Willing, Esq., Olds.
Saskatchewan—Rev. C. W. Bryden, Willoughby.
British Columbia (Mainland)—J. K. Henry, B.A., High School, Vancouver.
Vancouver Island—A. J. Pineo, B.A., High School, Victoria.

Constitution, &c., of the Botanical Club of Canada.

The Botanical Club of Canada was organized by a committee of section four of the Royal Society of Canada, at its meeting in Montreal, May 29th, 1891.

The object is to promote by concerted local efforts and otherwise the exploration of the flora of every portion of British America, to publish complete lists of the same in local papers as the work goes on, to have these lists collected and carefully examined in order to arrive at a correct knowledge of the precise character of our flora and its geographical distribution, and to carry on systematically seasonal observations on botanical phenomena.

The intention is to stimulate, with the least possible paraphernalia of constitution or rules, increased activity among botanists in each locality, to create a corps of collecting botanists wherever there may be few or none at present, to encourage the formation of field clubs, to publish lists of local floras in the local press, to conduct from year to year exact phenological observations, etc. ; for which purposes the secretaries for the provinces may appoint secretaries for counties or districts, who will

be expected, in like manner, to transmit the same impetus to as many as possible in their own spheres of action.

Members and secretaries, while carrying out plans of operation which they may find to be promising of success in their particular districts, will report as frequently as convenient to the officer under whom they may be immediately acting.

Before the end of January, at the latest, reports of the work done within the various provinces during the year ended December the 31st previous, should be made by the secretaries for the provinces to the general secretary, from which the annual report to the Royal Society shall be principally compiled. By the first of January, therefore, the annual reports of county secretaries and members should be sent in to the secretaries for the provinces.

To cover the expenses of official printing and postage, a nominal fee of twenty-five cents per annum is expected for membership (or one dollar for five years in advance, or five dollars for life membership). Secretaries for the provinces, when remitting the amount of fees from members to the general treasurer, are authorized to deduct the necessary expenses for provincial office work, transmitting vouchers for the same with the balance.

The names of those reporting any kind of valuable botanical work during the year will be published in the list of active members, even should the payment of fees be forgotten. All payments are credited to the current year and the future. Lapsed active membership can, therefore, be restored at any time without the payment of arrears—for there are no arrears recorded in the Botanical Club of Canada.

IV.—From *The Astronomical and Physical Society of Toronto,* through Arthur Harvey, F.R.S.C.

The ninth annual meeting of the society was held in its rooms in the Canadian Institute Building, Richmond Street East, Toronto, on January 10th, 1899.

The following are the officers for the present year :—

Hon. President—Hon. G. W. Ross, LL.D., &c.

President—Arthur Harvey, F.R.S.C.

Vice-Presidents—R. F. Stupart, C. A. Chant, M.A.

Corresponding Secretary—Geo. E. Lumsden, F.R.A.S.

Recording Secretary and Editor—Thos. Lindsay.

Treasurer—Chas. P. Sparling.

Librarian—W. B. Musson.

Assistant Librarian—Z. M. Collins.

Director of Photography—D. J. Howell.

Other Members of Council—J. B. Collins, Rev. C. H. Shortt, M.A., G. G. Pursey, A. T. DeLury, B.A.

The following papers, etc., were communicated to the society during the year 1898.

A detailed description of the society's astronomical lantern slides was presented by Mr. D. J. Howell. The collection includes many drawings of the solar corona and several reproductions of star clusters and nebulæ, made by Mr. Howell from photographs by Dr. Isaac Roberts, F.R.S.

The "History of the Greenwich Nautical Almanac" was continued by Mr. Lindsay. It had been possible to present a very full list of the early assistants and co-workers of Dr. Maskelyne in the preparation of the almanac. Prof. Nevil Story-Maskelyne, of Swindon, Eng., the grandson of the founder of the Almanac, had very kindly made many extracts from original note books, and had also presented to the society a photograph of the crayon drawing of Dr. Maskelyne which is now at Swindon. This was reproduced very fairly, and illustrates the chapter in Mr. Lindsay's sketch which deals with the lunar distance problem.

Observations of Mira (Omicron Ceti) were reported to the society by Mr. David E. Hadden and M. François Libert; there was a very general agreement in the recorded magnitudes as observed by these gentlemen; Mr. Hadden observed at Alta, Iowa, and M. Libert at Havre, France.

Mr. R. F. Stupart, Superintendent of the Meteorological Service, read, by special request, a very interesting and instructive paper on "Seismological Phenomena," illustrated by tracings of the earthquake records made by the seismograph at Toronto Observatory.

Mr. David Brown communicated a short paper on naked-eye observations, which occasioned an interesting discussion on keenness of vision, during which several instances were named of the satellites of Jupiter having been seen without optical aid, and among these one by the president.

Mr. Geo. E. Lumsden read, by special request, a paper on the subject of "Popular Observatories." A great deal of information had been collected from various sources as to the best method of constructing an observatory for work, not strictly of the highest class, but rather for the purpose of affording the people opportunity to observe the heavens and learn something of the wonders of the telescope. In the course of the paper it was stated that for an observatory to be really successful it is

necessary that it should be in some way connected with an educational institution.

Mr. W. B. Musson read a popular description of the Yerkes observatory on his return from a visit to that now celebrated centre of research. The thanks of the society were due to Prof. Hale and his staff, who had shown every kindness to Mr. Musson as the representative of the society, and had given him much information regarding the methods of observation, the work now being done, and the aims of the future.

One of the most interesting events of the year was the apparition of a great meteor on July 5th, which was seen by many observers in Ontario from Peterboro to Lake Huron. Notes of observations were collected by the president, and these formed a paper which was published in the Transactions. Some pieces of what were at first thought to be fragments of the meteor were picked up near Blantyre ; a careful examination, however, was against the extra-terrestrial origin of the matter.

The great sun spot group of September was observed by all the members interested in telescope work. This was easily seen by the unaided eye, extending as it did across about one-fifth of the sun's disc. Drawings were made by Mr. G. E. Lumsden, Dr. Wadsworth and by Mr. A. Elvins, who presented a paper dealing with the changes in the appearances of the group as it passed over the disc by rotation and on its second return on September 29th.

Mr. W. B. Musson presented a paper prepared by special request on "Ancient theories of motion and the Cosmos," a popular resumé of the views held by the philosophers of the old world from Thales to Ptolemy, concluding with a short sketch of the Newtonian philosophy.

Mr. John A. Paterson, M.A., read some notes on the serenity of the skies in the Muskoka district, pointing out that if ever a great observatory should be erected in Canada there was no better place than near the Muskoka Lakes.

Mr. J. B. Collins read a carefully prepared paper on "Spherical Aberration" in the telescope. The paper dealt specially with the defects in large reflectors to which the name of "Schaeberle aberration" has been given, it having been pointed out by Prof. Schaeberle, Director of the Lick Observatory. Mr. Collins showed that it is possible to eliminate this defect from the Cassegrain and Gregorian telescope by adopting special curvatures for the mirrors. The requisite curvatures were given and the conclusion reached that either of these forms is capable of giving more sharply defined images than most instruments generally considered superior.

A paper on the "November Meteors of 1898" was read by Mr. E. A. Meredith, LL.D. This was the last communication made to the society by this highly accomplished and universally esteemed gentleman. At the annual meeting, Dr. Meredith was re-elected vice-president, but almost before the society could communicate to him how much the members appreciated his scholarly attainments and genial disposition, he had passed away. Although far advanced in years, Dr. Meredith's death was not expected.

In addition to the regular meetings of the society, three open meetings were held, to which the public were invited. Prof. Alfred Baker, M.A., addressed a large meeting on the "Nebular Hypothesis"; Mr. Napier Denison gave an instructive address on "Meteorology," illustrated by stereopticon views; Rev. C. A. Shortt, M.A., delivered a popular lecture on "What an amateur may do without tools." It is the purpose of the society to continue these popular lectures.

The presidential address was delivered in the theatre of the Normal School by Mr. Arthur Harvey, F.R.S.C. The Hon. President, Hon. G. W. Ross, LL.D., in the chair.

After referring in the most affectionate terms to the late Dr. Meredith, whose friendship Mr. Harvey had for many years enjoyed, the progress of science during 1898 was reviewed. In the course of the address the President dealt at length with the discovery of the planet DQ (provisionally so named by letters, now known as Eros, and No. 433 in the list of minor planets); the track of the meteor of July 5th was shown on a map of Ontario, and an exhaustive review given of all the observations. The Leonid meteors, the variation of terrestrial latitude, and the phenomena of earthquakes were in turn discussed, after which the president dealt with solar phenomena very fully and exhaustively. In discussing solar outbursts, it was held and for the first time stated that there is a connection between these phenomena and those exhibited by comets. The theory was thus briefly announced: "Whenever a comet is near the sun, and a solar outburst occurs which causes a magnetic storm, the influence of that storm is felt in the rending apart of the material, whatever it be, of which the comet's tail is composed, in the excitement of the nucleus and the ejection of shining substance." The address concluded with a review of the special work which the society had accomplished in its endeavour to popularize the study of science in Canada.

V.—From *The Canadian Institute,* through SIR S. FLEMING, F.R.S.C.

The council of the Canadian Institute have the honour to lay before the members the fiftieth annual report.

During the year three life, four ordinary and four associate members, eleven in all, were elected. The unusual number of new members and associates added just before the visit of the British Association, twenty-nine in all, may account for the small number during the past year but in any event the record is not satisfactory, especially in view of the growing interest on the part of the public in the work of the institute. Doubtless the liberal policy of inviting the public to our meetings without regard to membership while it increases the usefulness of the institute, may to some extent affect our income unfavourably. As the institute will, during the ensuing session, celebrate the fiftieth anniversary of its existence, your council recommend that a special effort be made to interest by life and ordinary membership, many of our citizens who, while they doubtless realize the good work of the institute, are not directly engaged in scientific study.

As the list of members contained the names of many who were in arrears for fees, the council determined to deal with the subject and as a consequence forty-five names have been removed from the list and the membership is now, from the financial point of view, in a healthy condition. The additions during the past five years have been ninety, while the number removed from the list by resignation, death and arrears during the same period is seventy-four. The comparison is, however, unfair, because among the seventy-four were many names more than five years in arrears.

The number of ordinary meetings held was twenty-one, at which twenty-nine papers were read. These may be classified as follows: Geology 4, Mineralogy 3, Forestry 1, Astronomy 2, Biology 4, Archæology 2, Ethnology 2, Philology 1, History 3, Architecture 1, Miscellaneous 6.

The biological section held eleven meetings at which ten papers were read. The attendance at the regular meetings shows a slight increase over the previous year.

The publications of the institute during the past session have been as follow: Part 2 of volume 5 of the Transactions and Parts 4, 5 and 6 of volume 1, and Part 1 of volume 2 of the Proceedings. The editing committee have held several meetings in connection with the forthcoming Memorial Volume referred to in the forty-ninth annual report which will be issued before the close of the present

year. It promises to be in every respect a creditable evidence of the present state of scientific research in Canada.

The distribution of this Memorial Volume will afford an excellent opportunity of increasing to some extent the number of learned societies with whom we exchange publications. In this connection the council recommend that a thorough revision of the list of exchanges be made for the purpose, not only of adding new societies, but of removing the names of societies which no longer send us publications or whose publications are not a reasonable exchange for our own. This revision cannot be undertaken by the library committee at once because of the great labour of completing our present sets of publications, but incident to that work the library committee are accumulating information which will materially lessen the work of such revision.

The report of the Librarian is of more than usual interest this year owing to the success which has attended our efforts to fill the vacancies in the sets of publications on our shelves. Letters have been written to 346 societies and publishers and the volumes obtained thus far result from 165 replies to our requests. Since the date to which the figures in this report have reference many additional replies have been received, and when the work is completed we shall certainly have added most materially to the value of our library. In carrying on this important work, however, the council is confronted with the fact that we are unable to supply many back numbers of our own publications and these have been asked for by many of the societies which have been most generous in filling our own wants. The reserve supply of our publications has been carefully examined and a list of our deficiencies will shortly be published in the hope that members who possess such old numbers and who do not intend to preserve a complete set of the institute's publications, will donate or sell them to the council.

It will be remembered that the institute, in conjunction with the City Reference Library, the Librarian of the University of Toronto, the Education Department and others, undertook the preparation of a joint catalogue of Proceedings of Learned Societies and other journals. This was issued during the past year and it may be well to draw attention to some results which are already noticeable. First, there is an evident increase of the number of students who desire to consult the volumes in our library, and secondly, the various libraries have already made considerable progress in carrying out some of the reforms which it was hoped would result from the preparation of the catalogue. If two or more libraries have been obtaining an expensive publication, by mutual arrangement this duplication may be avoided and the cost diverted to some otherwise unprocurable work. Again, if there is not

a complete set of a certain publication in any one of the libraries, but a complete set can be made from the various incomplete ones, this is in some cases being done. In time by such friendly co-operation a very distinct improvement in our library conditions will have been accomplished. Although the scheme looking to the establishment of a Provincial and Civic Reference Library has now passed from the control of this institute into the hands of a public committee of which our late president, Professor Macallum, is the energetic chairman, it may not be amiss to state here that the work of creating public opinion in favour of this important project is being vigorously prosecuted.

The treasurer's report shows that we had at the close of the institute's fiscal year $464.70 in current income account, $1089.14 at the credit of our permanent fund and $4080.61 at credit of the British Association library fund. In the current income account the balance is $264.70 in excess of the previous year, but this might convey a quite erroneous impression as to our position. We have had to pay an unusually small sum this year for both publishing and binding, and during the ensuing year both items will be unusually large. In the matter of binding there will certainly be six or seven hundred extra volumes as the result of the effort to complete our sets and in the matter of publishing we have to face the quite large cost of the memorial volume. Of late years we have been receiving from the Ontario Government total grants of $1750. During the past year and for the ensuing year this has been cut down to $1250, at which figure the institute could not possibly pay its expenses and continue to do active work in promoting scientific investigation. In view of this fact and of the unusual expense attending the memorial volume a committee of the council waited on the government and requested that the sum of $500 be granted in connection with the memorial volume and that in recognition of the close of the fifty years of work by the institute the regular grant of $1250 be increased hereafter to $1500. The committee ventured to assure the government that if this was done the annual requests for additional aid which have been made by each year's council for some years past, will not be necessary. The sum of $500 has been placed in the supplementary estimates for 1899 as a special grant for the Jubilee volume and although we have no further assurance from the government, we confidently hope that after the ensuing year we shall enjoy a regular grant of $1500 per annum. It must be remembered, however, that this will be a smaller sum than we have been receiving, and that if we are to thrive a larger membership is absolutely necessary. The permanent fund has been increased during the year by $150, the fees paid by three life members.

Your council is glad to be able to state that during the year arrangements have been made by which the Astronomical and Physical Society has established its library and reading room in the building of the institute.

The reports of the librarian, the treasurer and the biological section are appended.

All of which is respectfully submitted.

B. E. WALKER,
President.

May 6, 1898.

William Scott, Treasurer, in account with the Canadian Institute, 1898-9.

RECEIPTS.

1898—Balance in Imperial Bank	$ 200 00
Government grant	1,250 00
British Association fund	418 00
1899—Annual subscriptions	646 25
Life subscriptions	100 00
Periodicals sold, etc	107 35
Rent	40 00
University studies	34 00
	$2,795 69

ASSETS.

1899—Building and grounds	$15,000 00
Library	8,500 00
Specimens	1,000 00
Personal property	1,000 00
	$25,500 00

LIABILITIES.

1899—Mortgage due 1901	$ 4,000 00
Balance in favour of the institute	21,500 00
	$25,500 00

EXPENDITURES.

1899.	
March 31—Salaries	$758 32
Insurance	77 50
Commission on fees	37 04
Miscellaneous printing	31 25
Fuel	109 80
Printing Proceedings and Transactions	390 80
Magazines, books, etc	136 75
Repairs, furniture, etc	59 44
Stationery	13 90
Light (gas)	60 21
Interest on mortgage	200 00
Binding	134 85
Labour in removing books, etc	26 86
Sundry small accounts	24 42
Carried forward	$2,061.14

Brought forward	$2,061.14
Postages	74 69
House	28 27
Water	5 94
Refreshments	15 01
Electric light	2 60
Sundries	28 14
Balance on hand—petty cash	5 59
Special deposit—Bank of Commerce	100 00
Cash in Imperial Bank	464 70
B. A. A. S. purchases	9 61
	$2,795 69

We have examined the accounts and vouchers of the Canadian Institute for the year ending March 31st, 1899, and certify that the same are correct.

L. J. Clark,
H. B. Lefroy,
Auditors.

Report of the Biological Section.

The Biological Section of the Canadian Institute beg to make the following report of the work done during the session of 1898-9 :—

The section held eleven meetings, the average attendance of members and visitors being about sixteen. At the meetings papers and addresses were given as follow :—

1. Local Oscillateria, two papers by Mr. Mills.
2. Two rare sandpipers (Spoonbill and Broadbill)—Mr. Maughan.
3. Diatoms found in the Don Valley—Mr. Armstrong.
4. Cryptogamic Botany—Mr. D. Mills.
5. The Passenger Pigeon—Mr. Maughan.
6. Entomology—Mr. Rippon.
7. The Saw Bill and Hammond Reef District—Mr. Harvey.
8. Muskegs—Mr. Harvey.
9. Life History of Some Insects—Mr. Armstrong.
10. General Microscopical Work—Mr. C. Armstrong.

Nos. 1, 3 and 9 were illustrated by the microscope and at Nos. 2, 5 and 6 mounted specimens were exhibited.

During the summer the section held several outings, one of which to Foster's Flats on the Niagara River, was much enjoyed by the members and friends.

At the annual meeting the following officers were elected for 1899-1900 :—

President—Mr. J. Maughan.

1st Vice-Pesident—Mr. A. Harvey.
2nd Vice-President—Mr. S. D. Mills.
3rd Vice-President—Mr. G. G. Pursey.
Secretary-Treasurer—Mr. E. V. Rippon.
Curator—Mr. C. W. Armstrong.
Members of Council—Messrs. Elvins, Spry and Sinclair.

J. MAUGHAN,
President.

G. K. POWELL,
Secretary-Treasurer.

Toronto, April 27th, 1899.

Report of Librarian.

TO THE PRESIDENT AND COUNCIL OF THE CANADIAN INSTITUTE :

Gentlemen,—The institute has, during the year, received 2,084 exchanges from about 517 learned societies in various parts of the world. It has obtained by purchase 776 numbers of 31 periodicals and has received 179 donations.

In addition to the foregoing ordinary accessions have to be added 396 complete volumes and 95 parts of volumes obtained from societies and publishers in response to the applications made by direction of the president. These additions have rendered absolutely complete 34 sets of publications hitherto imperfect and many others have been completed from dates earlier than the beginning of their exchange with the institute.

The number of volumes and numbers of periodicals taken out by members during the year was 662.

The number of volumes bound was 254.

On account of the growth of the library it has been found necessary to transfer a considerable part of the books to the small room adjoining the main room of the library.

A card catalgue of the books in the library has been begun.

All of which is respectfully submitted.

J. SQUAIR.

Toronto, May 6, 1899.

VI.—From *The Ottawa Literary and Scientific Society*, through PROFESSOR E. E. PRINCE, President.

Having been appointed by the Ottawa Literary and Scientific Society a delegate to the Royal Society of Canada, I have the honour to present the following report for the year ending March 31st, 1899. During the year the means whereby the society seeks to stimulate an

interest in literary and scientific matters have been employed with unflagging activity. It is a matter for satisfaction that the course of public lectures always a prominent feature in the educational work of the society has been of conspicuous interest and originality, and this is the more gratifying inasmuch as the lecturers, with one exception, were residents in the capital. In recent years the list of lecturers each winter has been largely made up of men distinguished in literature, science and art, who have come from a distance on the invitation of the council to favour the members and the public, with discourses upon topics in fields of which they were special masters. These visitors have been, in many cases, professors in the universities or leading men resident in cities more or less distant, and the high character of the lecture course has been maintained by this policy. It is not, however, too much to say that when the council decided to invite local men to take a larger part in the lecture course, they adopted a step which was justified, and it is a matter of special satisfaction to the society to have thus discovered that, in Ottawa itself, there is a body of men who are carrying on original work in various branches of knowledge, and are able to present their results in the form of literary criticism of a high order, of technical research and exposition, marked by great originality and of political and social inquiry, of no small value from the scientific economist's point of view. The society thus affords facilities for the presentation to the public of the important results reached by such workers, and in the lecture course provides opportunity for their exposition and for their thorough discussion, while in the published transactions it enables the authors to embody them in permanent form. This reference to the printed publication issued by the society demands a more detailed explanation. At last has been achieved what the society has long aimed at, viz., the issue of a printed journal, or volume of transactions, in which the more original and important communications, read to the society during the winter course of lectures, might be given the permanence of print. While the prime object of the society in the past has been the popularization of literature, philosophy, art and the natural sciences, by means of high-class lectures as well as by the library and reading room, it has been no less its object to stimulate original work and encourage its members to bring their results before the members of the society. It was vain to expect that this worthy object could be fully achieved unless the society were prepared to put these contributions into printed form.

The Transactions (Part I) which have been issued are but a beginning, but both in form and in the quality of the articles contained

in the pages of the Part I. it has successfully appealed to the public and won commendation on all hands. It is hoped that written material will from year to year become available which will not only maintain the features referred to and secure the welcome and the praise of the reading public far and wide, but will enable a much larger and more weighty journal to be issued in future years. There is no reason why the Ottawa Literary and Scientific Society should not issue a publication equal to any other in the Empire issued by a similar society—a publication that is to say of the highest character both in regard to the quality and originality, as well as to the quantity and variety of the subject-matter published. The part of the Transactions issued has resulted in the society receiving a large number of valuable publications in exchange from various European and United States societies. Of these societies scattered over the continents of Europe and Asia, 177 have no exchanges. A number of societies of wide repute have requested to be put on the list of exchanges. The part issued consists of 87 pages, 8vo, and the articles are eight in number and embraces the following subjects :—

I. "Historical Sketch of the Society," by Mr. Otto J. Klotz.
II. "The Name of Ottawa," by Mr. B. Sulte.
III. "The Violinist," (A Poem) by the late Archibald Lampman.
IV. "Place Names of Canada," by Mr. Geo. Johnson.
V. The Fur seal of the North Pacific," by Mr. J. M. Macoun.
VI. "The Yukon and its Gold Resources," by Mr. W. Ogilvie.
VII. "Utilization of Moss Lands," by Mr. Thos. Macfarlane.

A brief introductory page or two by the President (Mr. Klotz), forms an appropriate preface.

The lecture course was given in the society's large room and on several occasions the accommodation was found to be somewhat too limited. One lecture, viz., that by Professor Mavor, of the University of Toronto, was delivered in Goldsmith's Hall, Sparks Street—the subject being "The Doukhobors, their history and characteristics." A valuable series of lantern slides were shown including a number of new views lent by the Hon. Clifford Sifton, Minister of the Interior.

The library has proved a most valuable adjunct to the society's work, and the issues during the year have been 10,141, a marked advance on the previous year, when the total number of issues amounted to 8,603.

These issues are classified as follows :—

History and Biography	207
Travels	126
Fiction	7,533
Poetry	31
Philosophy and General Literature	140
Theology	5
Chemistry and Natural History	13
Astronomy and Mathematics	71
Bound Magazines	1,218
Unbound Magazines	797

The reading room is supplied with the leading newspapers, and the best serial literature. It is greatly valued by a large number of readers, and has been much used during the year. The expenditure upon it, $168.40, is liberal in view of the limited pecuniary resources at the society's command. The Literary and Scientific Society as the oldest society in the capital still continues one of the most active and valuable as an educational and elevating force in the community.

The active members number 312, 36 new members have been admitted and 28 members have withdrawn their names.

The receipts, including the Ontario Government grant of $400, were $1122.55 ; the balance on hand being $25.53.

At the recent annual meeting the following officers were elected for the year 1899-1900 :—

President—Professor E. E. Prince.

1st Vice-President—Mr. W. D. LeSueur.

2nd Vice-President—Mr. Charles Morse.

Treasurer—Mr. A. H. Whitcher.

Librarian—Mr. Otto J. Klotz.

Secretary—Mr. H. J. Bronskill.

Curator—Mr. Geo. P. Woolcombe.

Council—Mr. J. C. Glashan, Mr. J. M. Macoun, Mr. J. F. Jemmett.

The new council and officers have before them the task of adopting such a policy as will still more largely enlist the sympathy and support of the public in the future than in the past. The library and reading room and the publication of transactions will, there can be no doubt, ensure for the society an important place in the educational organization of the day. They fill a place and perform a work that would otherwise remain unfilled and undone, but there are other avenues of educational and elevating usefulness which remain to be taken up the coming season of the society.

VII.—From *The Ottawa Field Naturalists' Club,* through Dr. H. M. Ami, M.A., F.G.S.

On behalf of the council and members of the Ottawa Field Naturalists' Club I have the honour to present to the Royal Society of Canada the following brief summary of the work done during the past year. The four main lines of work, which my predecessor in office, Prof. E. E. Prince, pointed out to your honourable society a year ago, which the club sought to follow, have been duly kept in mind and pursued with the usual vigour which has characterized this club since its organization in 1879.

The club is thus entering upon the 21st year of its existence, and has sought by means of excursions into the broad field of nature, to interest all lovers of science in our district, with lectures and soirées held during the winter months, where papers are read and presented by various members on the different branches of the work carried on during the previous season, together with the exhibition of specimens and discussions thereon, many points are brought to light and recorded. Another feature of the club's work lies in the publication of the *Ottawa Naturalist,* which is the official organ of the club.

I have the honour to lay upon the table and present to your honourable society, volume 12 of our Transactions, containing 276 pages of printed matter, made up for the most part of original papers, notes and records of observations in the various branches of natural history, not only with special reference to the Ottawa District and the Ottawa Valley, in which we are more particularly interested, but also to the various provinces of British North America. It is the largest volume published by our club in any one year, and contains many original papers of world-wide interest.

The council of our club is pleased to note the increasing interest taken in natural history studies in the capital, by our members, as well as by those in charge of the educational interests of Ottawa and many private citizens.

From the special nature and work carried on by numerous branches and departments of the Government at Ottawa there have been brought together a large number of persons devoting their time and energies to the promotion and development of exact knowledge or science through the instrumentality of this society, and it is gratifying to see the membership increasing from year to year. It is pleasing to have to report, further, that the finances of the club are in a satisfactory condition.

General and Sub-Excursions.

Three large general excursions were held during the summer of 1898. The first of the season was to Chelsea, when 175 members were present. Professor Prince, the President, was in charge, with Mr. Shutt as Chairman of the Excursion Committee. Besides addresses from these gentlemen, two excellent discourses were listened to : the first on the geology of the district, by Professor L. W. Bailey, F.R.S.C., of the University of New Brunswick, for many years a member of our club, and another by Professor John Macoun, who spoke on the interesting plants collected, and pointed out the fact that four or five distinct species of violets had undoubtedly been united under the designation *Viola Cucullata.* The second excursion was held at Blueberry Point, Aylmer, where interesting collections in botany, geology and entomology were made. The usual addresses by leaders followed : by Prof. Macoun, "On edible and poisonous fungi;" by Mr. S. B. Sinclair and Dr. Fletcher on Botany and Entomology; by Principal Pollock, on the geological formations of the locality; and by the President, Prof. Prince. The third excursion of the season was held October 1st, to Gilmour's Grove, Chelsea, Que., where the normal school students attended in a body, and under the guidance of the various leaders of the different branches of the club, an enjoyable and profitable time was spent.

A number of sub-excursions or small working parties were also held at more or less regular intervals. These have always proved of particular value, as the results obtained are of a special and more definite nature than at the general excursions.

Lectures, Soirées, etc.

As in former years, a winter course of lectures and soirées was prepared and successfully carried out. These soirées are practically meetings for the exhibition of specimens and discussions on the various topics of natural history.

The following is the programme of soirées for 1898-1899 given under the patronage of the Right Honourable the Earl of Minto, Governor-General of Canada, patron of the club :—

1898.

Dec. 14.—Meeting for the Exhibition of Specimens and Conversation.
"Inaugural Address," by Prof. John Macoun, M.A., F.L.S.
"Notes on some Local Violets," by Mr. James M. Macoun.
Report of the Botanical Branch.—Discussion.

1899.

Jan. 10.—Meeting for Exhibition of Specimens and Conversation.

"The Minerals of the Ottawa Valley," by R. W. Ells, LL.D., F.R.S.C.

"Notes on an Herbivorous Deinosaur from the Cretaceous of Western Canada," by Lawrence M. Lambe, F.G.S.

Report of the Geological Branch.—Discussion.

Jan. 24.—Conversazione and Microscopical Soirée in the Assembly Hall of the Normal School. Microscopical objects were exhibited under microscopes and projected on the screen by means of a Newton projection microscope, loaned for the occasion by Dr. H. M. Ami. Short addresses were also given by Prof. Prince, Dr. James Fletcher, Prof. J. Macoun, Dr. H. M. Ami, Mr. W. S. Odell and Mr. James M. Macoun, on various collections of specimens exhibited.

Feb. 7.—Meeting for Exhibition of Specimens and Conversation.

"Some Native Herbaceous Perennials worthy of Cultivation," by Mr. W. T. Macoun.

"On the Burrowing Habits of Cambarus—the Cray-fish," by H. M. Ami, M.A., F.G.S.

"Notes on Fresh-Water Polyzoa," by Mr. Walter S. Odell.

Report of the Ornithological Branch.—Discussion.

Feb. 21.—Meeting for Exhibition of Specimens and Conversation.

"The Archæology of Lake Deschenes," by T. W. E. Sowter, Esq.

"Extra Limital Insects found at Ottawa," by W. H. Harrington, F.R.S.C.

Report of the Entomological Branch.—Discussion.

Mar. 7.—Meeting for Exhibition of Specimens and Conversation.

"Life History of the Salmon," by Prof. E. E. Prince, B.A., F.L.S.

"Natural History in Art," by Prof. James Mavor, Toronto University.

(Both papers were illustrated by lime-light views.)

Report of the Zoological Branch.—Discussion.

Some of these papers have already appeared in the pages of the *Ottawa Naturalist*, whilst the bulk of them is still in the hands of the editor, Mr. James M. Macoun, and will no doubt appear from month to month.

The soirées were all well attended, and the lengthy as well as important discussions which took place have since been recorded in the closing

numbers of volume XII. of the *Ottawa Naturalist.* On the 24th of January, the occasion of the annual conversazione and microscopical soirée, the club had the honour of a visit from the Right Honourable the Earl of Minto, who a few weeks previous, on his arrival to Canada to assume the high duties of his office, had kindly consented to become the patron of the club. A pleasing feature in connection with this event was the larger attendance of representatives from the various educational institutions in Ottawa.

The Ottawa Naturalist.

The *Ottawa Naturalist* is fast becoming recognized as the readiest and most convenient medium in which to publish records of observations and discovery in the field of science in Canada.

This publication was continued during the past year under the editorship of Dr. H. M. Ami, with the following staff of associate editors:

Dr. R. W. Ells, Geological Survey of Canada,—Department of Geology.

Mr. W. J. Wilson, Ph.B., Geological Survey of Canada,—Department of Mineralogy and Litholgy.

Prof. John Macoun, M.A., F.L.S., F.R.S.C., Dominion Botanist, Geological Survey of Canada,—Department of Botany.

Mr. F. R. Latchford, B.A.—Department of Conchology.

Mr. W. H. Harrington, F.R.S.C., Post-Office Department,—Department of Entomology.

Mr. W. T. Macoun, Central Experimental Farm,—Department of Ornithology.

Prof. E. E. Prince, B.A., F.L.S., Commissioner of Fisheries for Canada,—Department of Biology and General Zoology.

Amongst our contributors we note :—Dr. G. M. Dawson, Mr. J. F. Whiteaves, Prof. E. E. Prince, Prof. J. Macoun, W. H. Harrington, Dr. R. W. Ells, Rev. G. W. Taylor, Messrs. J. B. Tyrrell, A. G. Barlow, F. D. Adams, W. T. Macoun, W. F. Ferrier, W. R. Billings, L. M. Lambe, J. M. Macoun, F. T. Shutt, W. E. Saunders, Allan Brooks, Principal J. A. Dresser.

A brief summary of some of the more important contributions to biological, geological and other scientific literature with special reference to Canada, contained in the *Ottawa Naturalist* from 1898 to 1899, is here given.

In Zoology.

1. "The vanished Buffalo," by Prof. E. E. Prince, Commissioner of Fisheries, pp. 73 to 80, July, 1898.

2. "Change of Function in Fishes Fins," by Prof. E. E. Prince, B.A., F.L.S., pp. 129 to 132, Nov., 1898.

3. "Notes on Practical Demonstrations of the Animal Kingdom," by Prof. E. E. Prince, p. 33, May, 1898.

4. "Note on the Burrowing Habits of the Cray-Fish," by Dr. H. M. Ami, p. 267, March, 1898.

5. "An Ottawa Naturalist's Journey Westward," "The Aleutian Islands and Behring Sea," by Andrew Halkett, pp. 81 to 85, July, 1898.

In Geology.

1. "On the Remains of Mammoth in the Geological Survey Museum," by L. M. Lambe, F.G.S., pp. 136 to 137, November, 1898.

2. "On some Species of Palæozoic Corals," by L. M. Lambe, F.G.S., pp. 217 to 236, and pp. 237 to 238, February and March, 1899.

3. "Note on Boring for Fresh-Water in Granitic Rocks," by H. M. Ami, M.A., F.G.S., pp. 89 to 90, July, 1898.

4. "Notes on the Physiography and Geology of King's County, Nova Scotia," by H. M. Ami, pp. 149 to 150, November, 1898.

5. "The Cretaceous of the Athabasca River," by J. B. Tyrrell, M.A., B.Sc., F.G.S., pp. 37 to 41, May, 1898.

6 "On the Origin of some Archæan Conglomerates," by A. E. Barlow, M.A., F.G.S.A., pp. 205 to 217, plates vi.-ix., February, 1899.

7. "On some Fossil Cephalopoda in the Museum of the Geological Survey of Canada, Descriptions of Eight Species," by J. F. Whiteaves, pp. 116 to 127, September, 1898.

In Botany.

1. "Contributions to Canadian Botany, Pt. xii., being notes on specimens contained in the Herbarium of the National Museum of Ottawa," by J. M. Macoun, pp. 161 to 172, December, 1898.

2. "Notes on some New Species of Violets from Ottawa," by J. M. Macoun, pp. 181 to 197, aand plates i. to v., January, 1899.

3. "The Cryptogamic Flora of Ottawa," by Prof. John Macoun, Pts. iv., v. and vi. (concluded), pp. 25 to 32, May; pp. 49 to 56, June; pp. 93 to 100, August, 1898.

4. "The Flora of Long Point Island, Lake Erie," by LeRoy Boughner, Esq., of Simcoe, Ont., p. 105, August, 1898.

5. "The Maples Grown at Central Experimental Farm," by W. T. Macoun, Esq., Ottawa, pp. 133 to 136, November, 1898.

In Ornithology.

1. "Notes on the Birds of King's County, Nova Scotia," by Harold Tufts, Esq., of Wolfville, Nova Scotia," (1) pp. 172 to 177, (2) 229 to 233, (3) 259 to 262, December, 1898, to March, 1899.

2. "Bird Migration for 1898," by A. G. Kingston, pp. 41 to 43, May, 1898.

3. "Notes on the Arrival of Birds at London, Ont.," "Notes on Henslow's Sparrow, etc.," by W. E. Saunders, Esq., pp. 72, 145 and 177, Vol. XII., 1898.

4. (1) "Departure of Summer Birds," (2) "Bird Notes for July," (3) "A Little Bird Expedition," pp. 138, 104, 106, Vol. XII., *Ottawa Naturalist*, by F. A. Saunders, Esq., B.A.

In Entomology.

1. "Notes on the Entomology of Vancouver Island;" "Notes on Coleoptera, Lepidoptera, Hemiptera, Hymenoptera, etc.," *Ottawa Naturalist*, by Dr. James Fletcher, W. H. Harrington, Rev. G. W. Taylor, pp. 9 to 13, April, 1898.

In Chemistry.

1. "The Water of the Illicilliwaet Glacier," by F. T. Shutt, M.A., F.C.S., and A. T. Charron, B.A., pp. 226 to 228.

2. "Analyses of Ice from the Ottawa District," pp. 263 to 264, March, 1899, by R. F. Ruttan, B.A., M.D., C.M., of McGill Chemical Laboratory, Montreal, Que.

Besides these and a number of interesting and original papers on many branches of natural history appear in the *Ottawa Naturalist* for the last year, besides reviews of the leading works bearing upon scientific work done in Canada. Attention is also called to the reports of the leaders appointed, at the beginning of each season, in geology, botany, entomology and ornithology and other branches of work. These have been either read or published. Additions to the lists and records previously published are given in these reports.

The annual membership fee of the club is only $1.00 per annum, which collected, forms the main source of revenue by means of which the *Ottawa Naturalist* is published. The club now numbers close upon 250 on its paying membership roll. To further extend the usefulness of the club, and through the kind offices of the Honourable G. W. Ross, Minister of Education for Ontario, the sum of $200.00 was placed at the

disposal of the club, which enabled the council and publishing committee to issue the *Naturalist* more promptly, of larger size than heretofore, and with a number of illustrations and excellent figures which greatly enhance its value. The thanks of the club are due to the Education Department, Ontario, for this grant.

In recognition of the Government's action, several members of the club have undertaken to prepare collections of plants, botanical specimens, fossils and other geological specimens to be deposited in the museum of the Provincial Normal School of Ottawa. A number of these are already in place and others are in course of preparation. The thanks of the club are also due to Dr. MacCabe, Principal of the Normal School, Ottawa, for many courtesies extended to the club during the past year.

At the annual meeting held in March last, the officers of the club were duly elected. These are :—

Patron—The Right Honourable the Earl of Minto, Governor-General of Canada.

President—Henry M. Ami, M.A., D.Sc., F.G.S., F.G.S.A.

Vice-Presidents—Prof. John Macoun, M.A., F.L.S., F.R.S.C., A. G. Kingston, Esq.

Librarian—S. B. Sinclair, B.A. (Normal School).

Secretary—W. J. Wilson, Ph.B. (Geological Survey Department).

Treasurer—Dr. James Fletcher (Central Experimental Farm).

Committee—W. H. Harrington, W. S. Odell, J. M. Macoun, Miss M. Kee, Miss G. Harmer, Miss Marion Whyte.

Standing Committees of Council—*Publishing :* J. Fletcher, J. M. Macoun, W. H. Harrington, W. J. Wilson, A. G. Kingston.

Excursions: S. B. Sinclair, John Macoun, J. Fletcher, W. S. Odell, Miss Kee, Miss Harmer, Miss Whyte.

Soirées: A. G. Kingston, J. M. Macoun, W. H. Harrington, W. J. Wilson, Miss Whyte, Miss Kee.

Leaders—*Geology :* R. W. Ells, L. Lambe, W. J. Wilson, T. J. Pollock.

Botany: J. M. Macoun, R. B. Whyte, D. A. Campbell, R. H. Cowley.

Entomology: J. Fletcher, W. H. Harrington, C. H. Young.

Conchology: J. F. Whiteaves, F. R. Latchford, A. Halkett.

Ornithology: W. T. Macoun, A. G. Kingston, Miss Harmer.

Zoology: John Macoun, W. S. Odell, A. Halkett, A. E. Attwood.

Archæology: T. W. E. Sowter, H. B. Small, J. Ballantyne.

The Ottawa Naturalist.

Editor—Mr. James M. Macoun (Geological Survey Department, Ottawa).

Associate Editors—Dr. R. W. Ells, Geological Survey of Canada—Department of Geology.

Dr. H. M. Ami, Geological Survey of Canada—Department of Palæontology.

Mr. R. A. A. Johnston, Geological Survey of Canada—Department of Mineralogy.

Mr. A. E. Barlow, Geological Survey of Canada—Department of Petrography.

Dr. Jas. Fletcher, Central Experimental Farm—Department of Botany.

Mr. F. R. Latchford, Ottawa—Department of Conchology.

Mr. W. H. Harrington, Post-Office Department—Department of Entomology.

Mr. W. T. Macoun, Central Experimental Farm—Department of Ornithology.

Prof. E. E. Prince, Commissioner of Fisheries for Canada—Department of Biology.

Prof. John Macoun, Geological Survey of Canada—Department of Zoology.

VIII.—From *The Miramichi Natural History Association,* through Dr. J. V. Ellis, M.P.

This association was organized Tuesday, February 9th, 1897, and has for its objects :

First. To promote the more thorough study and investigation of the natural history of the North Shore of New Brunswick, and publish the same from time to time.

Second. To make it an adjunct to popular education, and to encourage the study of natural phenomena and allied matters by the young.

Third. To popularize the subject and afford opportunities for mutual instruction through the medium of lectures.

Fourth. To establish a museum of natural history objects, including ethnological remains, that would be fully representative of the past and present.

Fifth. To investigate subjects of economic importance, such as forestry and fishery matters, with a view to utilizing the knowledge so obtained to the growth and preservation of these industries.

As this is the first report of the association, a synopsis is given of its doings from its organization to the end of the official year in February, 1899. In this time eighteen regular monthly meetings and twenty-two additional ones, during the winter season were held, at which papers were read and lectures delivered.

The museum may be referred to under the following heads :—

Botany.

The committee on botany reports that upwards of five hundred plants have been mounted, labelled and arranged in genus and family covers, and that plant mounting is being continued.

Ornithology.

The mounted birds already number a hundred and fresh accessions are being made from time to time.

Mammology.

Twenty-six specimens of the smaller species and a number of skins and crania are represented, and form an attractive feature of the general collection.

Ichthyology.

This department represents well the smaller and fresh-water fishes, and in this respect is the most complete in the Maritime Provinces of Canada, consisting of over one hundred and twenty alcoholic specimens. It also contains some rare fishes in spirits, besides a few of the larger ones mounted.

Herpetology.

The curators report about forty alcoholic specimens of reptilia, and already steps have been taken to enlarge the collection so as to make it representative of the whole reptilian fauna of the Dominion of Canada.

Invertebrate Zoology.

In this section excellent work has been done. The entomological cabinet shows over fifteen hundred specimens, and many molluscs and marine articulates have been collected, but owing to lack of room no systematic arrangement of the latter material has yet been made.

Archæology.

In this department are to be found about twenty-five pre-historic implements and a number of interesting relics of early French occupation.

In February, 1899, the association issued its first bulletin containing the following articles :—

1. "The Anoura of New Brunswick," by Philip Cox, Ph.D.
2. "La Epizoa," by J. McGregor Baxter, M.D.
3. "Dust," by R. P. B. Joyce.
4. "Our Winter Birds," by J. McGregor Baxter, M.D.
5. "A Preliminary List of the Moths of Miramichi with Notes Thereon," by J. D. B. F. Mackenzie.
6. "Some Modern Rock-Building," by F. A. Dixon, M.A., Principal Sackville High School.
7. A report by Jas. McIntosh, Secretary to the Botanical Committee, containing a list of plants new to the province, or whose range has been extended.

It also contains a list of donations to the museum.

The membership numbers 85, and the finances of the association are in a healthy condition. It is gratifying to report that the local government has given a grant to help in promoting the objects of the association.

The officers for the year 1899 are the following :—

Patron—Hon. Peter Mitchell.

President—J. McG. Baxter, M.D.

Vice-Presidents—Daniel Ferguson and J. D. B. F. Mackenzie.

Treasurer—Miss Alice Loggie.

Secretary—George B. Fraser.

Corresponding Secretary—Philip Cox, Ph.D.

Librarian—Miss Bessie M. Creighton.

Curators—J. McG. Baxter, M.D., Miss K. I. B. MacLean, Miss A. G. McIntosh, Philip Cox, Ph.D.

Additional Members of Council—J. L. Stewart, Jas. McIntosh, Col. S. U. McCulley.

IX.—From *The Nova Scotia Historical Society*, through Hon. J. W. Longley, D.C.L., F.R.S.C.

This body has had a very active and successful year.

Six papers were read during the season as follow :—

November—"History of the Supreme Court," by Hon. Mr. Justice Townshend.

December—"History of the Forts and Military of Halifax," by Henry Piers.

January—"Reminiscences of the Bar," by C. S. Harrington, Esq., Q.C.

February—"History of Education in Nova Scotia," by A. H. MacKay, LL.D., F.R.S.C.

March—"History of Free Masonry in Nova Scotia," by Hon. Wm. Ross, P.C.

In addition, the society had the pleasure of a visit from Sir John G. Bourinot, in January, who gave a paper on the Makers of Nova Scotia to a very large and distinguished audience.

The society has made arrangements for the due and fitting celebration of the 150th anniversary of the founding of Halifax on the evening of June 21st.

The officers for the year are :—

President—Hon. J. W. Longley, F.R.S.C.

Vice-Presidents—Rev. Dr. Forrest, Dr. A. H. MacKay, Hon. Judge Townshend.

Corresponding-Secretary—F. Blake Crofton, Esq.

Recording-Secretary—W. L. Payzant, Esq.

Treasurer—R. J. Wilson, Esq.

X.—From *The Nova Scotian Institute of Science*, through James Fletcher, LL.D., F.R.S.C., F.L.S.

The Nova Scotian Institute of Science through its delegate begs to submit to the Royal Society of Canada, a report on its proceedings during the past session.

Meetings were held from November, 1898, to May, 1899.

The following officers were elected for the year 1898-99 :—

President—Alexander McKay, Esq., F.R.M.S.

1st Vice-President—A. H. MacKay, Esq., LL.D., F.R.S.C.

2nd Vice-President—F. W. W. Doane, Esq.

Treasurer—W. C. Silver, Esq.

Corresponding Secretary—Professor J. G. MacGregor, D.Sc., F.R.S.C.

Recording Secretary—Harry Piers, Esq.

Librarian—Maynard Bowman, Esq.

Other Members of Council—Edwin Gilpin, jr., Esq., LL.D., F.R.S.C.; Martin Murphy, Esq., D.Sc.; William McKerron, Esq.; Roderick McColl, Esq., C.E.; S. A. Morton, Esq., M.A.; Watson L. Bishop, Esq.; P. O'Hearn, Esq.

Part 4 of volume IX of the Proceedings and Transactions has been published and distributed, and Part 1 of volume X will be proceeded with immediately.

Besides the presidential address by Alexander McKay, Esq., the following papers were communicated to the institute during the session just ended :—

1. "On Statistics of Consumption and Expenditure in Canada," by Prof. J. Davidson, Phil.D.

2. "Infusorial Earths of the World, and the Iceberg Period," by A. M. Edwards, Esq., M.D.

3. "On the Diatomaceæ of Nova Scotia," by A. H. MacKay, Esq., LL.D., F.R.S.C.

4. "School-Room Air," by Prof. Lee Russell.

5. "New Mineral Discoveries in Nova Scotia," by Edwin Gilpin, jr., Esq., LL.D., F.R.S.C.

6. "A Sanitarium for Consumptives," by A. P. Reid, Esq., M.D.

7. "On the Determination of the State of Ionization in Complex Solutions," by Prof. J. G. MacGregor, D.Sc., F.R.S.C.

8. "Observations on the Time of Flowering of Plants in various Counties of Nova Scotia," by A. H. MacKay, Esq., LL.D.

9. "A Note on the Rigidity of India-Rubber," by Prof. J. G. MacGregor and W. A. McDonald, Esq.

10. "On the Conductivity and other Physical Properties of Aqueous Solutions containing Potassium Chloride and Potassium Sulphate," by James Barnes, Esq.

11. "Observations on a Fish new to the Fauna of Nova Scotia," by Harry Piers, Esq.

12. "On the Presence of Acid Sulphates in Solutions containing Copper Sulphate and Sulphuric Acid," by Charles F. Lindsay, Esq.

13. "Notes on Nova Scotian Zoology," by Harry Piers, Esq.

XI.—From *The Numismatic and Antiquarian Society of Montreal*, through W. D. Lighthall, M.A.

The society continues to make sound progress in its various phases of historical work. Its ordinary membership on the 20th December, 1898, was 340, and 13 new life governors had been added during the year. In the course of the summer of 1898 the city of Montreal granted it a twenty-five year lease of the Chateau de Ramezay in recognition of the value of the museum to the city and country.

A balance of debt of some $1200 has been paid off during the year, over and above current expenses and purchases, and a surplus is now in the treasury.

The Ladies' Branch has held many pleasant and instructive meetings and is undertaking the furnishing in historical style of one end of the building. The *Antiquarian Journal* has been issued quarterly.

Among the many donations and acquisitions were originals of Col. DeSalaberry, his father and mother; Intendant Hocquart, Lord Metcalfe, and the Porlier series, including fine oil pictures of Sœur de Youville, her sister, father, brother-in-law and two others of the same period; Col. Gugy, Mde. du Barry; copies in oils of Iberville and Bienville; photographic copies of two pictures now in England reported to be of General Montcalm and his wife; a handsome painting of Jacques Cartier's Chateau of Limoilou; the five Indian skeletons recently unearthed at Westmount; a large donation of books by the French Government to the library, and many rare works, flags and engravings and Indian antiquities. Among the lectures and papers read were the following :—

Sir John Bourinot—"The Loyalist Makers of Canada."

Dr. Francis W. Campbell—"The War of 1812."

Lucien Huot—"Nos Visiteurs Américains au Château de Ramezay en 1775—Benedict Arnold."

Hon. Judge Baby—"La Legende du Chien d'Or."

W. D. Lighthall—"A New Hochelagan Burying Ground."

F. S. MacKay—"Notes on Col. F. S. MacKay, with original documents."

R. W. McLachlan—"Notes on the Original Purchase of the Chateau de Ramezay Site, 1703."

On the 15th of November, a resolution was passed and published protesting against the proposed sale of the Plains of Abraham as building lots.

XII.—From *The Hamilton Association* (for the session of 1898-99), through Dr. Fletcher, F.R.S.C.

During the present session there have been held seven general and twenty-one section meetings. At twelve of these meetings papers were read and discussed, as follows :—

1898.

Nov. 17th—"Inaugural Address," President T. W. Reynolds, M.D.
Nov. 25th—"Palæontological and Geological Notes," Col. C. C. Grant.
Dec. 8th—"International Law," W. A. Logie, M.A., LL.B.
Dec. 30th—"Palæontological and Geological Notes," Col. C. C. Grant.

1899.

Jan. 5th—"The Theory of Telepathy," S. A. Morgan, B.A., B.Pæd.
Feb. 2nd—"Natural History Notes," Wm. Yates, Esq.
Feb. 4th—"Palæontological and Geological Notes," Col. C. C. Grant.
Mar. 9th—"Odd Characters Among the Early Settlers," Inspector J. H. Smith.
Mar. 31st—"Malacology," Col. C. C. Grant.
April 13th—"Some Mental and Social Inheritances," David Boyle, Esq.
April 28th—"Malacology," Col. C. C. Grant.
May 4th—"Poisonous Mushrooms and Edible Toadstools," W. A. Childs, M.A.
May 4th—"Natural History Notes," Wm. Yates, Esq.

The association's museum has been opened to the public every Saturday afternoon throughout the session, and a very large number of visitors have availed themselves of the opportunity thus afforded. We are also pleased to report a number of valuable additions to the museum during the present session.

The financial statement shows :—

Receipts..	$577 18
Expenditure..	430 33
Balance on hand..	$146 85

Officers for session of 1899-1900 :—

President—T. W. Reynolds, M.D.
First Vice-President—A. E. Walker.
Second Vice-President—J. M. Dickson.
Corresponding Secretary—Thos. Morris, Jr.
Recording Secretary—S. A. Morgan, B.A., B.Pæd.
Treasurer—P. L. Scriven.
Curator— Alex. Gaviller.
Members of Council—W. C. Herriman, M.D., W. H. Elliott, B.A., W. A. Childs, M.A., W. A. Robinson, Robt. Campbell.

XIII.—From *The Women's Canadian Historical Society*, through MRS. GEO. E. FOSTER, President.

The W. C. H. Society, of Ottawa, was organized on the 11th day of November, 1898, and has now a membership of 150. The regular meetings of the society take place on the second Friday of each month, at four o'clock in the hall of the Y. W. C. A.

The work of the society has been chiefly the preparation of papers, following two lines of study: one, respecting the French regime in Canada, the other respecting local history.

The following papers have been read during the year:—

Nov. 11th—"The Origin of the Canadian People," Mrs. W. W. Campbell.
"The Beginning of Bytown," Miss Kenny.

Dec. 13th—"Early French Colonization," Madame Sulte.
"The Last Chief of the Macnabs," Mrs. H. Pinhey.

Feb. 13th—"The Customs and Habits of the Early French Settlers," Mad. LeLièvre.
"The Early Days of Ottawa," Miss Read.

Mar. 10th—"A Page from the Annals of Our First Missions," Mad. Lamothe.
"The Early Settlers of March," Mrs. T. Ahearn.

Mar. 29th—"The County of Renfrew in the Early Days," Mrs. J. Lorn McDougall.

April 14th—"The Second Administration of Frontenac," Miss LaRue.
"The Battle of Chrystler's Farm," Mad. Rhéaume.

May 12th—"Last Years of the French Régime," Miss Walker.
"The Battle at Lundy's Lane," Mrs. J. Ketchum.

A programme of study, outlining the leading events of the French régime, was distributed among the members at the first of the year, intended for their guidance in the discussion which follows the reading of each paper.

It is the intention of the society to hold an historical exhibition in Ottawa, opening on the 31st of May, hoping by this means to further extend its influence.

During the coming year it will be the policy of the society to collect material for the compilation of local histories of the surrounding counties, and each member has been invited to assist.

The following gentlemen have lectured before the society and its friends:—

Sir John Bourinot, F.R.S.C., on "The Loyalist Makers of Canada."

Mr. Benjamin Sulte, F.R.S.C., on "The Origin of the French Canadians."

Dr. S. E. Dawson, F.R.S.C., on "Indian Warfare on the Canadian Border in Revolutionary Times."

XIV.—From *The Elgin Historical and Scientific Institute,* through SIR JOHN BOURINOT.

During the past year the publication of historical sketches of school sections has been continued.

The meetings of the institute have been of a most interesting character, and among the more important papers presented were :—

1st. "The English Puritan and his place in History," by Mr. Cecil Lavelle.

2nd. "Lake Medad, and the Indian Trails," by Mr. J. H. Coyne.

3rd. "History of the Life of Captain Peter Teeple, the Pioneer of the Long Point Settlement," by Mr. W. B. Waterbury.

Arrangements have been made for holding an historical exhibition, commencing on the 22nd of May, in the city of St. Thomas.

The officers of the institute for the year 1899-1900 are as follow :

President—J. A. Bell, C.E.

Vice-President—W. B. Waterbury.

Editor—Judge Ermatinger.

Members of the Council—Messrs. J. H. Coyne, K. W. McKay, E. H. Caughell, W. Aitkin, W. H. Murch, D. J. Hughes, and Mrs. Burns and Miss Ermatinger.

Secretary—K. W. McKay, *pro tem.*

The society will have permanent quarters allotted to them in the municipal buildings now being erected in the city, and a permanent secretary and curator will then be appointed.

XV.—From *The Women's Historical Society of Toronto,* through LADY EDGAR.

The Women's Historical Society of Toronto, who are again honoured in being invited to send a delegate to your meeting, have much satisfaction in being able to submit the following :—

Since May, 1898, its membership has increased, and the interest aroused in Canadian history has much broadened. The importance of preserving from destruction papers, documents, relics and historic land-

MARINE BIOLOGICAL LABORATORY WOODS HOLE LIBRARY MASS.

marks has also been impressed upon the minds of a wider circle of people.

The society has held eight regular meetings, and one open meeting, at which they had the honour of receiving Mr. Gilbert Parker, who has also proved a generous friend to the society, of which he is an honorary member. Eight regular meetings of the executive and one extra meeting have been held. The increase in the membership necessitated removal from the hospitable roof of the Canadian Institute, where the society had been permitted the use of a room since its formation. Having outgrown the accommodation at the council's disposal, the society is now indebted to the Hon. Dr. Ross, Minister of Education, for the use of a room in his building.

The annual membership fee being only fifty cents, and no grant or aid having yet been asked from the Government, the funds at the disposal of the society have not been sufficient to cover more than the running expenses.

The society has taken an active interest in the monument to be erected to Laura Secord, two of its members being members of the committee having it in hand.

On November 16th, 1898, the officers of the previous year were re-elected, with the exception of the Second Vice-President, Mrs. James Bain. Mrs. Edward Leigh, one of the executive committee, was elected Second Vice-President. On the executive committee Miss Ellerby replaced Mrs. Walton. Forty-four new members have been added to the roll of active membership since May last. Professor John Campbell and Dr. Douglas Brymner have been elected honorary members. A regular course or series of subjects for the papers to be submitted to the members was outlined and carried out so successfully that the programme has resulted in securing a larger attendance and rapid increase of membership.

The following are the titles of the papers in a course on the Conquest of Canada:—"King William's War, 1689-1697," by the Secretary. This paper has since been published in the Wentworth Historical Society Transactions, 1899; "War of the Spanish Succession, or Queen Ann's War, 1702-1713," by Mrs. Forsyth Grant; "War of the Austrian Succession, or King George's War, 1741-1748," by Miss Ada McKellar; "The Conflict in the Ohio Valley," by Miss Grant Macdonald; "The Campaign on Lakes Champlain and George," by Miss Lefroy; "The Taking of Louisbourg," by Miss Mabel McLean Helliwell. This is to be followed by a paper on "The Capture of Quebec, 1759," by Miss Rowand, to be read at the June meeting, which will complete the course. The

following papers have also been read: "Quebec in 1775," by Mrs. S. G. Wood; "Brebœuf's Wanderings," by the President; "Wayside Records," being the records from some tombstones of the U.E. Loyalists, by Miss Sara Mickle; "Some Archives," by Mrs. J. W. Harrison (Seranus); "An Historical Ramble up Yonge Street," by Miss Bessie MacMurchy; "The Historical Interests of the Mackinac Trip," by Mrs. Willoughby Cummings. At the June meeting the President will read a "Letter from the Maryland Archives."

The society has printed an annual report, and Transaction No. 2.

The society had to mourn the loss by death of its much-valued founder and life honorary President, Mrs. S. A. Curzon. Transaction No. 2 is one of the last papers written by her for the society, and in response to the question of at what hour the battle of Queenston Heights was fought. This is also prefaced by an "In Memoriam" notice by her successor in office, Lady Edgar.

The society has also, in common with the Royal Society, to mourn the loss of an honorary member in the death of the historian, Dr. William Kingsford, and would take this opportunity of commending the action of Sir William Macdonald, of Montreal, in establishing a chair of history in McGill University to his memory, and would also add their voice to any petition which may be presented to the Dominion Government praying that some provision be made for the family of one to whose untiring energy, devoted endurance, and continuous labours the students of Canadian history will ever owe a debt of gratitude.

The society has, by the liberality of the *Canadian Home Journal*, been furnished with an official organ. In the columns of this monthly publication they are enabled to print regular official reports of the meetings held and papers read. This has also been a means of widening the radius of their influence, and has been productive of the organization of other historical societies in other localities.

The society has received many donations of autograph copies of Canadian historical publications, and also some original documents and papers, which, if funds at their disposal enabled them to print, would be of value to historians. Among these are letters from Newark by Mr. Secretary Jarvis and his wife, 1792 to 1813. Several of the papers read also contain sufficient original matter to warrant their publication.

The society being affiliated with the Ontario Historical Society, has undertaken the carrying out of the proposed Canadian Historical Exhibition to be held in the Victoria University, Queen's Park, Toronto, on June 14 to 28, 1899. The committee which has this underaking in hand is making the most satisfactory progress, and it is anticipated that

the collection of historical material will form an exhibition which cannot but be of great value in arousing a patriotic and appreciative interest in Canadian history.

XVI.—From *The New Brunswick Historical Society*, through Mr. S. D. Scott.

The society which I have the honour to represent is now twenty years of age, and at no time since it was founded have its members shown more earnestness and industry in the work of research than during the last three or four years. The contributing members number fifty-two, and the honorary or corresponding members, who live at a distance from the place of meeting, number twenty-one. During the last year monthly meetings have been held except during midsummer, and at nearly every meeting one or more papers have been read. A grant of $125 a year from the Provincial Government has been of assistance in providing for the publication of the collections. The volume issued this year, the fourth of the present series, is a book of 134 pages, containing six papers. These are :—

"The Journal of Captain Wm. Owen, R.N., during his residence on Campobello, 1770-71," edited by Prof. Ganong, of Smith's College, Massachusetts. This is the second paper on the subject.

"Census Return of the Town of Conway in 1775."

"Census Return of Settlement at St. John in 1775."

"The James White Papers: A Record of Social, Mercantile and Political Life on the St. John River before the Loyalists' Immigration," by Rev. W. O. Raymond.

"The Pennfield Records: An Account of a Quaker Settlement established in 1783 in New Brunswick and subsequently abandoned," edited by J. Vroom, of St. Stephen.

"The North Shore: A Record of events on the Miramichi and other Settlements on the Gulf Coast," compiled by Rev. W. O. Raymond, from the journal of Captain Marston and other sources.

In addition to these papers there were contributions from Leonard Allison on the early history of King's County, from Mr. Raymond, Mr. W. K. Reynolds and others.

Some of the papers read before this society have been published in the *New Brunswick Magazine*, a periodical which deals with matters of local history, and is edited by W. K. Reynolds.

Much attention has been paid by the society to the records of the Loyalist founders of the city of St. John. The interest in this study was

stimulated by a lecture delivered a year ago by Sir John Bourinot, on the joint invitation of the Historical Society and the Loyalist Society of St. John.

The Historical Society has endeavoured to awaken the interest of the St. John citizens and the council of the city in the preservation of the old burial ground, the last resting place of the Loyalist founders of the city, and has remonstrated against the neglect which has permitted the destruction of the few tombstones and monuments remaining in the grounds. The society has also called the attention of the Minister of Militia to the dilapidated condition of Fort Cumberland, and requested his intervention to preserve what remains of the famous historic structure from further desecration.

The officers of the society are :—

President—S. D. Scott.

Vice-Presidents—Dr. P. R. Inches, Lt.-Col. Wm. Cunard.

Recording Secretary—Clarence Ward.

Corresponding Secretary—Jonas Howe.

Treasurer—H. H. Pickett.

Librarian—W. G. McFarlane.

Members of Council—Rev. W. O. Raymond, Geo. A. Henderson, W. K. Reynolds, W. P. Dole, Alfred Morrissy.

XVII.—From *The Natural History Society of New Brunswick*, through Mr. G. U. Hay, M.A., F.R.S.C.

As in the past, it has been our privilege to report success, utility and growth, so we have again to record a year of prosperity. The library has undergone more real improvement than has been the case for some years; many of our members have availed themselves of the greater facilities afforded them.

More frequent opportunities have been afforded the public to visit the museum, and the very largely increased numbers that take advantage of this clearly show their appreciation of the additional opportunities now given for studying the collections.

Considerable work has been done in the museum, especially in the departments of botany, entomology and ornithology.

Bulletin XVII., which has recently been issued, contains valuable articles by Dr. Geo. F. Matthew, President G. U. Hay, Professor W. F. Ganong, Professor A. Wilmer Duff, Geo. J. Trueman, S. W. Kain, Wm. McIntosh and others.

The membership roll shows an increase of fifty names. One life member and three ordinary members were lost through death last year.

Thirteen meetings were held, at which the following papers were read :—

June 7.—(1) Report of Delegate to the Royal Society, by W. J. Wilson.
(2) "Early Forms of Decoration and Art," by Miss Jack.

Oct. 4.—(1) "Geological and Topographical Features of Newfoundland," by Dr. Geo. F. Matthew.
(2) "Notes on Some Phenomena in Grand Manan," by D. I. W. McLaughlin. (Published in St. John *Globe*, October 6, 1898). Describes remarkable sound heard at midnight, September 15th, 1898; auroral display on evening of September 17th; very heavy ground swell on September 18th. Attributes the heavy swell to hurricane which swept over West Indies on September 10th.

Prof. A. W. Duff, among letters to the editor in *Nature*, Vol. LIX., pp. 247-248, January 12th, 1899, refers to this heavy ground swell in explaining the nature and cause of secondary undulations in the Bay of Fundy and elsewhere.

(3) "Note on Lack and Cost of a Topographical Survey of New Brunswick," by Prof. W. F. Ganong.

Nov. 1.—(1) "Note upon Natural Pavements and their possible misinterpretation in Archæology," by Prof. W. F. Ganong.
(2) Note, "Attempts at Oyster Culture in Passamaquoddy Bay," by Prof. W. F. Ganong.
(3) "Bird Enemies, Natural and Unnatural; and why Birds should be Protected," by A. Gordon Leavitt.

Dec. 6.—(1) "New Brunswick Butterflies," by W. McIntosh.
(2) "Note on the Dip of the Magnetic Needle in New Brunswick," by Prof. A. Wilmer Duff.
(3) "Preliminary Outline for a Study of the Precise Factors Determining the Features of New Brunswick Vegetation," by Prof. W. F. Ganong.
(4) "Note on the Nature of the Mud in our many Mud Lakes," by Prof. W. F. Ganong.

1899.

Jan. 3.—(1) "Note upon Biological Opportunity in New Brunswick," by Prof. W. F. Ganong.
(2) "Note upon a Current Error as to the Location of (Nictor) Bald Mountain, Tobique," by Prof. W. F. Ganong.

(3) Address, "Economic and Social Conditions in Newfoundland," by W. Frank Hatheway.

Feb. 7.—(1) "Wind Effects on Vegetation on the Isthmus of Chignecto," and "The Pearl Fishery of New Brunswick," Prof. W. F. Ganong.

(2) "A New Cambrian Trilobite," by Geo. F. Matthew, M.A., D.Sc., LL.D.

(3) "Physics of Light," Illustrated, by G. Ernest Fairweather.

March 7.—(1) "Forestry Problem of New Brunswick," by Prof. W. F. Ganong.

(2) "Artesian and Fissure Well in New Brunswick," by G. F. Matthew and S. W. Kain.

April 4.—(1) "Field Work and what it may accomplish," Jas. Vroom.

(2) "Notes on Batrachians and their Relatives," by Charles F. B. Rowe.

May 2.—(1) "Methods of publication," by S. W. Kain.

(2) "Notes on the Natural History and Physiography of New Brunswick," by Prof. W. F. Ganong.

In addition to the above, weekly lectures were held on Thursday afternoons under the auspices of the associate members' branch. Papers were read by Miss Jack, Miss Eleanor Robinson, Miss Frances Murray, Miss Christine D. Matthew, Dr. Geo. F. Matthew, Robert Matthew and S. W. Kain.

At the thirty-seventh annual meeting held in January last, the following officers were chosen for 1899 :—

Patron—Hon. A. R. McClelan, Lieutenant-Governor of New Brunswick.

President—Geo. U. Hay, M.A., Ph.B., F.R.S.C.

Vice-Presidents—Wm. Murdock, C.E., H. Geo. Addy, M.D.

Treasurer—A. Gordon Leavitt.

Secretary—Charles F. B. Rowe.

Librarian—Samuel W. Kain.

Curators—Geo. F. Matthew, F.R.S.C., Wm. McIntosh.

Additional Members of Council—J. Roy Campbell, W. Frank Hatheway, W. H. Mowatt.

Assistant Librarian and Curator—Miss Edith McBeath.

Associate Members' Branch :—

President—Mrs. Geo. F. Matthew.

Secretary-Treasurer—Miss Edith McBeath.

XVIII.—From *la Société de Géographie de Québec*, through M. C. Baillairgé, F.R.S.C.

La Société, depuis son dernier rapport annuel, n'a guère fait preuve d'activité, si ce n'est dans ses insistances auprès de nos gouvernants pour les engager à favoriser le voyage projeté du capitaine Bernier à la recherche du pôle nord.

C'est ainsi que sous ses auspices, cet enthousiaste marin a fait plusieurs conférences, dans lesquelles il a exposé l'itinéraire qu'il se propose de suivre et les moyens qu'il entend prendre pour réussir dans son enterprise.

La presse s'est emparée du sujet ; de nombreux comptes rendus ont été publiés, ainsi que des lettres du capitaine Bernier lui-même ; et déjà au Canada et à l'étranger le projet est connu et bien vu du public en général.

Ce n'est pas dans un but de simple gloriole personnelle ou nationale que Bernier désire entreprendre cette expédition, et si la société de géographie de Québec s'intéresse autant à son projet, c'est que maintes questions scientifiques trouveraient leur profit à la réalisation du rêve qu'il forme.

Quelques membres marquants de la Société royale ont déjà témoigné beaucoup d'intérêt à l'entreprise, et, suivant l'opinion de la Société de géographie de Québec, il serait à espérer que la Société royale du Canada aidât du poids de son autorité à l'accomplissement de cette tâche hardie que le capitaine Bernier a confiance de mener à bonne fin.

XIX.—From *The Entomological Society of Ontario*, through Rev. Thomas W. Fyles, D.C.L., F.L.S.

The Entomological Society of Ontario held its thirty-fifth annual meeting in Montreal on the 8th and 9th of November last. The society is gaining ground—is lengthening its cords and strengthening its stakes, or, to use another figure, is rooting itself more firmly in public estimation, while its ramifications are vigorous and fruitful.

Originated in 1863, through the efforts of a very few earnest men, who were impressed with a sense of the practical value of entomological pursuits, the society has steadily progressed till it has attained a degree of importance that insures for it the respect of scientific men "all the wide world over." Its publications are now circulated in 22 countries, in the four quarters of the world. On this continent, not only are they distributed throughout our own Dominion, they are sent also to no less

than 40 of the states and territories of the great Republic to the south of us.

At 429 Wellington Street, London, Ont., the society has its headquarters, a large, convenient and well-appointed room, with a valuable library of 1,600 volumes, and cabinets containing many thousands of choice specimens, contributed by its members or obtained by purchase or donation. Among its treasures are special collections, such as the Pettit collection of Coleoptera, the Loomis collection of Japanese butterflies, the Moffat collection of Canadian Lepidoptera, acquisitions gained through years of research by skilful scientific men.

The society's librarian and curator is Mr. J. Alston Moffat, a man devoted to his work, well acquainted with the objects under his care, and most kind and obliging to those who seek information from him. The room is open at all convenient hours, and an examination of its contents will well repay the naturalist who will take the time to visit it.

The various sections of the society are working zealously. The botanical section reports the discovery of three plants new to the district of London. It also draws attention to a species of wild lettuce (*Lactuca scævola*) that is rapidly spreading, and becoming troublesome to the agriculturists of Middlesex county, and to a species of dodder (*Cuscuta epithymum*) that flourishes upon clover. The microscopical section held nine meetings in the course of the year. Papers on "Shine Moulds," Bacteria, Radiolaria, Diatoms, and Marine Algæ, were read before it. The geological section met weekly throughout the year. Its report describes the bituminous shales of Kettle Point, the "Crystal Cave" at Put-in Bay, and the strontium found in it, the Alvinston shales, the dolomite rocks at Galt, and the new oil-field in Sarnia township.

Notes on the "Insects of the Year" have been sent in by the society's divisional directors, Messrs. W. Hague Harrington, Ottawa; J. D. Evans, Trenton; Arthur Gibson, Toronto; A. H. Kilman, Ridgway; R. W. Rennie, London. These notes appear in the society's annual report.

Flourishing branches of the society exist in Toronto, Montreal and Quebec. That of Montreal is particularly deserving of notice, forasmuch as it has recently celebrated the twenty-fifth anniversary of its formation. To do honour to the occasion, the parent society held its annual meeting in Montreal, and the Natural History Society and the Microscopical Society of that city gave their aid and support. The proceedings were of a most interesting and enjoyable character.

The society's monthly organ, *The Canadian Entomologist*, completed its thirtieth volume in December last. In this volume articles from fifty-three contributors may be found. Some of the authors wrote

from such distant places as Cape Town, Africa; Hildesheim, Germany; Mesilla, New Mexico; Masset, Queen Charlotte Islands. The volume contains, amongst other important matter, descriptions of thirty-five new genera, and 190 new species of insects, and it is illustrated with six plates, one of which is beautifully coloured. Among its more important articles are :—

"A Generic Revision of the Lachneidæ," by Harrison G. Dyar, Washington, D.C.

"On the History and Habits of the 'Wood-engraver'—Ambrosia Beetle," by A. D. Hopkins, Entomologist, West Virginia Agricultural Station.

"The Coleoptera of Canada," by H. F. Wickham, Iowa City.

"New and Little Known Bees," by T. D. A. Cockerell, N.M. Experiment Station.

"Some Indiana Acrididæ," by W. S. Blatchley, Indianapolis. Ind.

"New Species of Chionaspis, and Notes on previously known species," by R. A. Cooley, B.S., Amherst, Mass.

"New Species of North American Myrmelionidæ," by Rolla P. Currie, Washington, D.C.

"Metallic Species of Basilodes aand New Species of Allied Genera," by R. Ottelengui, New York.

"Descriptions of New Genera and Species of the Geometrina of North America," by Geo. D. Hulst, Brooklyn, New York.

"Notes on some Ontario Acridiidæ," by E. M. Walker, Toronto.

"Classification of the Horntails and Saw-flies, or the sub-order Phytophaga," by William H. Ashmead, Assistant Curator, Department of Insects, U.S. National Museum.

"Additions to my Synopsis of the Tachinidæ," by D. W. Coquillett, Washington, D.C.

The twenty-ninth annual report of the society (published by the Ontario Department of Agriculture, Toronto), printed by order of the Legislative Assembly of Ontario, has just been issued. It is embellished with portraits of William Hague Harrington, F.R.S.C., President of the Entomological Society of Ontario, 1893-5, and John Dearness, I.P.S., President of the Entomological Society of Ontario, 1895-7, and also with 67 figures of insects. It contains a full account of the annual meeting, reports from the officers and the various divisions and branches of the society, the President's address, articles entitled :—

"Some Economic Features of International Entomology," by F. M. Webster.

"The Farmer's Garden and its Insect Foes," by the Rev. Thomas W. Fyles.

"Entomology in Schools," by Wm. Lochhead, Ontario Agricultural College, Guelph.

"Injurious Insects in 1898," by Dr. James Fletcher, Ottawa.
and a number of short papers of great value.

In the President's address attention is drawn to some remarkable experiments, of interest to biologists, made by Mr. Henry E. Crampton, Jr., of the Department of Zoology of Columbia University. Mr. Crampton succeeded, in a number of instances, in grafting one insect in the pupal stage upon another in the same condition. For instance, he cut off the head portion of one chrysalis and several segments of the abdomen from another, and then joined the main portions of the two by means of a ring of paraffin. Coalescence was completed, and, after a time, a living, eight-winged monstrosity was produced.

The disposition evinced by some, in the present day, to tamper unnecessarily with the nomenclature and classification of insects, now accepted, is also spoken of. Our systems are not perfect, but the day for a thorough revision of them has not yet come, and will not, till the life-histories of the various species and the literature respecting them are better known. The late Dr. Lintner did excellent work in tracing such histories, aand in heading his remarks with names and synonyms and references to authors. His work in these respects, as in others, is a model for entomologists.

In connection with this subject, the paper by Mr. Dwight Brainerd, in this same report, on "The preparation of specimens for the exhibition of life-histories in the Cabinet," will be found valuable. The plate that accompanies it shows groups of insects in all stages. There are the eggs, the larvæ, the pupæ, the perfect insects (both types and varieties), the wings denuded of scales to show the venation, and the parasites that assail the species. From an educational point of view, a complete collection on Mr. Brainerd's plan would indeed be accounted a treasure. The article is the more valuable because the author describes his method of preparing specimens for the cabinet.

Another important paper in the report is Professor Wm. Lochhead's "Entomology in Schools," showing *Why? How?* and *When?* the subject should be brought before the rising generation.

It is hoped that sufficient has been said to show that the society's publications are of value. Prepared chiefly for the agricultural community, its reports deal largely with troublesome insects and the methods of destroying them; but the beautiful and beneficial species are not

overlooked in them, and even, as regards the less attractive kinds so much that is wonderful in their structure and life-histories is made known to us—so clearly is it shown that, through and beyond the trouble they may give to man, destructive insects have important parts to play in the economy of Nature—that our admiration is excited, and we feel the truth so quaintly expressed by the Rev. George Herbert :

> "Nothing we see but means our good,
> As our delight, or as our treasure ;
> The whole is either our cupboard of food
> Or *cabinet of pleasure.*"

Appended is a list of the officers for 1898-9 :—
President—Henry H. Lyman, M.A., Montreal.
Vice-President—Rev. T. W. Fyles, D.C.L., F.L.S., South Quebec.
Secretary—W. E. Saunders. London.
Treasurer—J. A. Balkwill, London.

Directors :
Division No. 1—W. H. Harrington, F.R.S.C., Ottawa.
" No. 2—J. D. Evans, Trenton.
" No. 3—Arthur Gibson, Toronto.
" No. 4—A. H. Kilman, Ridgway.
" No. 5—R. W. Rennie, London.

Directors *ex-officio* (ex-presidents of the Society)—Prof. Wm. Saunders, LL.D., F.R.S.C., F.L.S., Ottawa, Director of Experimental Farms ; Rev. C. J. S. Bethune, M.A., D.C.L., F.R.S.C., Headmaster Trinity School, Port Hope; James Fletcher, LL.D., F.R.S.C., F.L.S., Entomologist and Botanist, Experimental Farms, Ottawa; John Dearness, I.P.S., London.

Director *ex-officio* (Ontario Agricultural College)—Prof. Wm. Lockhead, Guelph.

Librarian and Curator—J. Ashton Moffat, London.

Auditors—J. H. Bowman and W. H. Hamilton, London.

Editor of the *Canadian Entomologist*—Rev. Dr. Bethune, Port Hope.

Editing Committee—Dr. J. Fletcher, Ottawa; H. H. Lyman, Montreal; J. D. Evans, Trenton; W. H. Harrington, Ottawa; James White, Snelgrove.

Delegate to the Royal Society—Rev. Dr. Fyles, South Quebec.

Delegates to the Western Fair—J. Dearness and W. E. Saunders, London.

Committee on Field Days—Dr. Wolverton, Messrs. Balkwill, Bowman, Elliott, Law, Percival, Rennie, Saunders and Spencer, London.

Library and Rooms Committee—Messrs. Balkwill, Bethune, Dearness, Moffat and Saunders.

XX.—From *The Niagara Historical Society,* through Sir John Bourinot.

Since sending our last report we have to chronicle during the year fair progress as a society. Three delegates attended the annual meeting of the Ontario Historical Society, held at Oshwekin, on the Indian Reserve near Brantford, and much enjoyed the novel sights as well as the kind treatment received from our red brothers. During the summer we sent petitions to the Minister of Militia and to the Secretary of State, complaining of the use made of the building known as Navy Hall, and received encouraging replies. We also sent a petition protesting against the proposed monument to Montgomery at Quebec, and on 1st September joined in a vigorous protest against the Michigan Central Railway obtaining a lease of Fort George, and rejoice that in consequence, the lease was cancelled. Another feature of our work was the sending out of five hundred copies of a circular to United Empire Loyalists asking their advice as to erecting a monument to commemorate the landing on our shore, and we also sent a petition to the Ontario Government asking for a grant, but so far, very little progress has been made in this direction, but we still have hopes that our efforts may yet be crowned with success. The increasing collection in the historical room has caused the suggestion to be made that the proposed memorial take the form of a building to contain the collection, the names of the early settlers to be placed on the walls, and thus a permanent and safe place for depositing these valuable relics would be secured.

During the year eight regular meetings were held, besides various committee meetings. A paper was read contributed by Miss Fitzgibbon, drawn from letters of the Jarvis family from Niagara—from 1792 to 1810. Our pamphlet No. 4, contains a paper read by Mr. J. H. Coyne, on "Memorial to U. E. Loyalists;" "Queenstown Heights," by Hon. J. G. Currie; "Museums," by Mr. David Boyle; "Monuments," by Miss Carnochan. Another pamphlet, No. 5, is almost ready to be issued; it contains a sermon which we were fortunate enough to obtain by Rev. R. Addison; "History of Mrs. Jean Baptiste Rousseaux,"

"Historic Houses," by Alexander Servos, Charles Taggart and Jessie McKenzie; "Palatine Hill" and "Evolution of an Historical Room," by Janet Carnochan. Both of these are illustrated.

Our historical room has during the year been open every Saturday and many visitors have enrolled their names; there are now over 1000 articles, one hundred framed pictures and documents are on the walls. John Ross Robertson, M.P., who has taken much interest in our collection, has kindly printed for us, free of expense, 500 copies of a catalogue containing twelve pages. A short historical article appears each week in our local paper and a list of articles contributed. We exchange pamphlets with many historical societies, and we have many members in distant towns who join simply to obtain our papers. Many letters are received asking information from our documents. We record with gratitude a grant for printing purposes from the Ontario Government and also a small grant from the County Council.

Officers :

Patron—Wm. Kirby, F.R.S.C.
President—Miss Carnochan.
Vice-President—Henry Pafford.
Secretary—Alfred Ball.
Treasurer—Mrs. A. Servos.
Curator—Russel Wilkinson.
Committee—Rev. J. C. Garrett, W. W. Ireland, B.A., Mrs. Clement, Mrs. T. F. Best, Mrs. Ascher.
Hon. Vice-Presidents—C. F. Ball, Mrs. Roe.

XXI.—From *The Literary and Historical Society of Quebec,* through Mr. P. B. Casgrain, President.

The Literary and Historical Society of Quebec, through its President and special delegate to this meeting of the Royal Society of Canada, begs to report as follows :

On behalf of the society, which it is my privilege to represent, I have pleasure in saying, that it has spared no effort during the year just expired, to fulfil the object contemplated in its charter,—the research and publication of historical information on Canada.

It has been able to resume, as heretofore, the publication of its "Transactions," which have been recently issued, and they have been sent in exchange as usual to other cognate societies.

I lay before you a copy of these "Transactions," and for supplementary information as to our proceedings for the last year, the details thereof may be found in the annual report hereunto annexed.

The attention of our society has since been directed, among other subjects, to a topic of paramount importance, also taken up with zeal by other historical associations on our soil, that is to say, the preservation as an heritage for the Dominion of Canada, of a site, at its doors, eminently historical, the Heights of Abraham, where the two heroic leaders, Wolfe and Montcalm, met in deadly combat more that one hundred years ago.

Thanks to the energetic action of one of its most esteemed former Presidents, Sir James McPherson LeMoine, it has been able to collect, for publication in its future transactions the earnest protests of the press of Canada and abroad, and the patriotic resolutions of cognate societies, against the desecration of this famous battle field, which, it is feared, might be lost to the public domain and be cut up into building lots.

The Literary and Historical Society of Quebec feels it its duty as such, to call also the attention of the Royal Society of Canada to what might be named a national calamity and disgrace, and respectfully invites its action and interference to assist in preventing the perpetration of a deed so hostile to the public feeling, not only in Canada, but also in the British Empire at large.

(*Morning Chronicle,* January 12th, 1899.)

LITERARY AND HISTORICAL.

Work of the Quebec Society During Last Year.

The members of the Literary and Historical Society held their annual meeting yesterday morning. The President, Mr. P. B. Casgrain, occupied the chair, and presented the following report of the council:

The council, in conformity with the rules of the society, presents its report for the past year.

The stated meetings have been well attended. The lectures during the year were of general interest and were received with much favour by large audiences. They were given in the following order:—

February 19th, by Professor Sharp. Subject: "George Eliot."

April 12th, by Professor Gregor. Subject: "The New Canadian Patriotism."

November 22nd, by Professor de Kastner. Subject: "La Fusion des Races."

We have caused Professor Gregor's paper to be printed with this year's Transactions, and we leave to our successors the printing of Professor de Kastner's lecture, which has met with a success that it thoroughly deserved.

We are in a position to fulfil the promise made last year of resuming, though in a feeble manner, the publication of the Transactions of the society, with the hope that in the future we may be able to put forth, as in the past, some literary or historical documents of interest to the people of Canada.

The President has recently written and published a work entitled "La Vie de Joseph François Perrault." M. Perrault was one of the pioneers of education in this province, and one of the founders of the Literary and Historical Society of Quebec. This biography is connected with primary education in this province, and therefore has immediate relation with the objects which this society was intended to promote. The author has, with great liberality, furnished a sufficient number of copies of the work to be supplied to kindred associations in this and other countries, as a return for the customary exchanges. The council desires to express its sincere gratitude for this act of generosity on the part of the President.

Our rooms have been visited during the past year by many strangers and men of literary acquirements.

Our collection of souvenirs of olden times has been augmented by a donation of the much appreciated statue of General Wolfe, which, after its divers wanderings, will find a suitable shelter and rest in our rooms.

We renew and offer the thanks of our institution to C. F. Sise, Esq., as President of the Bell Telephone Company of Canada, Montreal, for this relic of the past.

The Council has to mourn the loss by death of many of its members during the past year, viz., Messrs. W. E. Duggan, J. S. Fry, T. D. Tims, R. H. Smith and Robert Hamilton.

We regret to announce that we have received the resignation of Messrs. J. E. Livernois, Théophile Ledroit and Edmond Joly de Lotbinière.

Those who have left the city and ceased to be members are: Rev. Réné Casgrain, Messrs. W. M. Macpherson, Robert McCord, E. Racey, L. R. Ross, Whitehead and J. G. Golden.

The new members elected are:—Messrs. I. G. Golden, Arch. Foulds, Wm. Laurie and Thomas Brodie.

We have much pleasure in announcing that, through persistent efforts, a number of manuscript documents which had been, at the

requisition of the Government, transferred to its archives in the year 1888, under a misconception that they formed a part of the public documents, have been returned to the society, they being copies only of original papers, of right belonging to it. They are now on the shelves of our library, there to remain in future.

The Assistant Librarian has verified the total number so returned, amounting to 31 volumes folio, which are of considerable value, both as regard their original cost and their substance. The list hereto appended specifies all these documents.

No indemnity, nor annual grant, as promised for the appropriation of these documents by the Government, has yet been received. We still hope for a more favourable consideration of our claim.

We owe a debt of gratitude to the officers of Morrin College for their kindness in allowing us the use of their rooms for the lectures given through the agency of our society.

The report of the Treasurer is summed up as follows :—

The receipts were..	$525 67
Disbursements....	509 43
Balance on hand..	$ 16 24

There is also to the credit of the Endowment Fund, in the Quebec Savings Bank, the sum of $2,053.58.

When the society was incorporated in 1831, it was composed of gentlemen belonging to every nationality and creed in Quebec. The French speaking part of the population had a fair and proportionate number in the ranks of the society. We regret to observe that the same zeal has not been shown during the last decade.

It is true that the cognate institution which exists in our midst, viz., the Institut Canadien, has diverted many to its library and reading room; nevertheless, it is to be hoped that our society will receive such encouragement as may tend to preserve its initial footing and character, as embracing all nationalities and creeds.

In conclusion, the President offers his best thanks to the very Reverend Dean Norman, Vice-President, for his valuable assistance in the performance of his duties, and for his kind and graceful manner in giving a helping hand.

The whole respectfully submitted,

P. B. Casgrain,
President.

Quebec, January 11th, 1899.

The report was unanimously adopted on motion of Mr. P. Johnston, seconded by Mr. Cyr. Tessier.

The officers elected for the ensuing year are :—

President—P. B. Casgrain, re-elected unanimously.

First Vice-President—Sir James LeMoine.

Second Vice-President—Rev. Dean Norman.

Third Vice-President—J. T. Ross.

Fourth Vice-President—G. Gustavus Stuart.

Treasurer—J. Geggie.

Recording Secretary—A. Robertson.

Corresponding Secretary—J. F. Dumontier.

Council Secretary—Wm. Wood.

Librarian—F. C. Wurtele.

Curator of Museum—A. Foulds.

Curator of Apparatus—Wm. Clint.

The President thanked the meeting for its renewed confidence and the honour conferred upon him, and the meeting adjourned.

WM. WOOD, *Secretary.* P. B. CASGRAIN, *President.*

XXII.—From *The Ontario Historical Society,* through MR. BENJAMIN SULTE.

The Ontario Historical Society begs to report that in addition to its membership, consisting of ex-officio, honorary, corresponding, and annual members, it now includes fifteen affiliated local historical societies, whilst two others are applying for affiliation. Five of these local societies have been organized during the last twelve months.

Meetings of the society have been held as follow :—

Annual Meeting, June 1st, 1898.

Industrial Exhibition Meeting, September 2nd, 1898.

Winter Session, February 15th, 1899.

The following papers have been read or handed in at the various meetings :—

1. "Early Missionaries to Canada," Rev. Canon Bull, M.A.

2. "The Descendants of Thayendanegea," (Captain Joseph Brant) J. Ojijatekha Brant-Sero.

3. "Patriotic and National Societies," John D. Servos.

4. "A Monument to commemorate the Landing of the U. E. Loyalists at Niagara," Miss J. Carnochan.

5. "British Immigration into Upper Canada, 1825-1837," A. F. Hunter, M.A.

6. "Early Fairs in Upper Canada," C. C. James, M.A.

7. "The Dominion Archives," Mrs. Harrison, (Seranus).

8. "The Importance of Local Reminiscences and Family Records," Miss Ball.

9 "Early Travel in Canada," Miss M. A. Fitzgibbon.

At the winter session, Mr. Reuben G. Thwaites, Secretary of the Wisconsin Historical Society, delivered at the public meeting in the Educational Building, Toronto, an interesting lecture upon the importance of historical societies.

The annual meeting held in June last on the Grand River Reserve at Oshwekin, was one of peculiar interest, the society being the guests of the Six Nations Indians, who entertained the visitors in the most hospitable manner. The Six Nations were represented by seven delegates, some of whom delivered eloquent addresses.

At the September meeting the society was honoured with the presence of His Honour, Sir Oliver Mowat, K.C.M.G., Lieutenant-Governor of Ontario, who has taken great interest in its operations.

Besides publishing its annual report, the society has now in the printer's hands a valuable collection of early records, relating to the first settlement of Upper Canada, which, it is expected, will be ready for distribution at the next annual meeting.

Action has been taken by the society, by representations to the proper authorities, for the preservation of the walls of the old forts at Quebec and Fort Erie, for the prevention of the proposed sale of the old fort at Toronto, and of the leasing of Fort George to a railway company; also for the withholding of Government sanction to the building of the proposed Montgomery monument at Quebec, and to promote the movement for the erection of a monument to Laura Secord.

At the late session of the Ontario Legislature, an Act was passed to incorporate the society, conferring upon it the same powers as are possessed by the Royal Society of Canada. An easy mode of incorporation of local societies is included in the statute, and there is a provision making the provincial society curator of the library, museum, and property of any local society ceasing to exist. In the event, however, of a new historical society being formed in the municipality, the provincial society is to hand the property over to the new organization, upon such conditions and provisions for the security of the same as may be agreed upon.

A very energetic committee, composed chiefly of ladies belonging to Toronto, has been formed with Lady Edgar as chairman, for the purpose of holding an historical exhibition at Toronto. Arrangements

are nearly completed, and everything promises a most successful exhibition.

The officers elected at the last meeting, together with the presidents of local societies, who under the constitution are *ex-officio* vice-presidents of this society, are as follow :—

Honorary President—Hon. G. W. Ross, LL.D., Minister of Education, Toronto.

President—James H. Coyne, B.A., St. Thomas.

1st Vice-President—D. B. Read, Q.C., Toronto.

2nd Vice-President—J. Ojijatekha Brant-Sero, Hamilton.

Ex-officio Vice-Presidents (Presidents of Local Societies)—Miss J. Carnochan, Niagara; Eli Crawford, Brampton; Rev. Canon Bull, Niagara Falls South; Judge J. A. Ardagh, Barrie; F. J. French, Prescott; Jas. A. Bell, St. Thomas; Rev. P. L. Spencer, Thorold; Lady Edgar, Toronto; John D. Servos, Niagara; R. W. Sawtell, Woodstock; Mrs. George E. Foster, Ottawa.

Secretary—David Boyle, Education Department, Toronto.

Treasurer—B. E. Charlton, Hamilton.

Council—Mary A. Fitzgibbon, Toronto; J. H. Land, Hamilton; W. H. Doel, Eglinton; A. F. Hunter, M.A., Barrie; T. H. Parker, Woodstock.

XXIII.—From *le Cercle littéraire de Montréal*, through Mme Marc Sauvalle.

Le Cercle littéraire de Montréal, dont l'affiliation à la Société royale du Canada date de plusieurs années déjà, a bien voulu me confier le soin de soumettre à votre docte assemblée le rapport de ses travaux. J'aurais certes désiré qu'un membre plus digne et plus assidu que moi, que notre secrétaire en particulier, dont les procès-verbaux sont tenus non pas dans de prétentieux registres mais dans de mignons carnets faciles à glisser dans la poche comme des cahiers de confidence qu'on lit et relit avec la bonne souvenance des choses vues et entendues en commun, j'aurais préféré, dis-je, laisser cet honneur à meilleur interprète, d'autant plus que je suis aujourd'hui tenue de vous présenter un double rapport. Le Cercle littéraire, lors de la convocation extraordinaire de la Société royale, il y a deux ans à Halifax, s'était fait représenter par le révérend pasteur Duclos, mais n'a pu, l'année dernière, envoyer de délégué à la réunion annuelle de votre Société, ce qui va m'imposer le devoir de vous faire simultanément l'énumération des travaux accomplis au cours des hivers de 1897, 1898 et 1899.

Dans la première période—1897-98—le Cercle littéraire a tenu douze séances au cours desquelles les travaux et études dont suit la liste ont été présentés :—

Les découvertes de Pasteur, par M. le Dr de Martigny ;
La graphologie, par Mlle Amos ;
Un dîner manqué, par M. le pasteur Lafleur ;
L'art et la morale, par M. Boissevain ;
La petite robe (conte de Noël), par M. Louis Fréchette ;
La station climatérique de Lezin, par M. Georges Herdt.

Discussion sur l'art, à laquelle ont pris part tous les membres du cercle.

Voyage au Cap Breton, par M. le pasteur Duclos ;
Considérations sur la pauvreté, par M. le pasteur Lafleur ;
Avignon, par Mme Demole ;
Phédon ou de l'âme, par M. le Dr Coussirat ;
La tête à Pite (conte canadien), par M. Louis Fréchette ;
La maison de Victor Hugo à Guernesey, par M. le pasteur Morin ;
Une visite chez Victor Hugo, par M. Louis Fréchette ;
Souvenirs de Nicolini et de Patti, M. J. Herdt ;
Visite à Saint-Malo, par M. le pasteur Morin ;
Origine et développement du Français, par M. le vicomte des Etangs ;
Les quatre grands siècles, par M. Louis Fréchette ;
L'explorateur Nansen, par M. le pasteur Amaron ;
A propos d'un sonnet de Mallarmé, par M. Boissevain ;
Notes sur René Doumic, par M. le Dr Coussirat ;
A pied de Houston (Texas) *à la Nouvelle-Orleans*, par M. Marc Sauvalle ;
Etude historique : le cinquantenaire de la République neufchateloise, par Mme S. Cornu.

L'hiver de 1898-99, avec son cortège de grippe, de rhumatismes et de bronchites, n'a pu être marqué par une ponctualité aussi stricte dans la tenue des réunions, et le Cercle ne s'est assemblé que dix fois, pour entendre les travaux suivants :

Auguste Sabatier (étude), par M. le docteur Coussirat ;
Journal de voyage, par M. J. Herdt ;
Sur le seuil, (conte de Noël), par M. Louis Fréchette ;
Etude sur le sonnet, par Mme S. Cornu ;
Un secret, par M. le pasteur Morin ;
Henry Ward Beecher, par M. le docteur Coussirat ;
Rousseau à Genève, par M. le pasteur Duclos ;
Flânerie dans Washington, par M. Marc Sauvalle ;

Ici et là, par Mme King-Vessot ;
La jeunesse de Salvini, par M. le pasteur Amaron ;
Pâques en Russie, par Mlle Huguenin ;
Réflexions sur l'humanité, par M. le pasteur Lafleur ;
Sur le tragique, par M. le pasteur Morin.

Comme vous pouvez en juger, messieurs, par la liste des sujets traités, ce n'est certes par la variété qui manque dans nos réunions, et lorsque j'aurai ajouté que, chaque soir de Cercle, le programme officiel est entrecoupé de lectures et de récitations, de musique instrumentale et vocale, et, l'hiver dernier, de projections photographiques et cinématographiques, vous verrez vous-mêmes que nous avons fait de notre mieux pour nous rendre dignes du gracieux patronage que la Société royale du Canada veut bien nous accorder.

Notre cercle vient de terminer sa quatorzième année d'existence et ce sont, à bien peu d'exceptions près, chaque année les mêmes noms qui paraissent au tableau d'honneur du devoir accompli. Poursuivant modestement la tâche qu'il s'est imposée, notre petit cénacle, simple dans ses aspirations, sobre dans ses goûts, constitue pour beaucoup d'entre nous un lien intellectuel bien touchant avec la patrie absente. C'est à parler d'elle avec amour que se passent nos soirées familiales dont sont bannies les questions brûlantes et dans lesquelles la controverse la plus chaude n'a, comme vous avez pu voir, d'objet plus grave que le choix d'un sonnet ou la détermination d'une définition juste et d'un terme propre.

Nous n'avons d'autre désir que de satisfaire à l'instinct social qui anime nos coeurs sur la terre d'exil; nous ne prétendons faire école ni dans l'art ni dans les lettres, il y en a trop d'entre nous pour qui ce mot est une réalité glorieusement acquittée ! Très-humble est notre rôle comme très-sincère notre attachement au pays hospitalier dans lequel nous le remplissons.

Le gouvernement de la République française a bien voulu honorer un de nos membres fondateurs les plus dévoués et les plus féconds dans la personne du révérend Dr Coussirat, professeur d'études hébraïques à l'université McGill de Montréal, qui a reçu la décorataion d'officier d'Académie en reconnaissance de ses précieux travaux.

Jamais hommage ne fut plus noblement mérité et la Société royale se joindra, je crois, au Cercle littéraire pour remercier le gouvernement français de cette marque de distinction conférée à l'un des maîtres de l'enseignement supérieur spécial au Canada.

Et maintenant, messieurs, que je me suis acquittée de la mission qui m'avait été confiée, veuillez me permettre de vous exprimer toute

ma gratitude pour votre aimable accueil et tous les souhaits que je forme pour le succès de vos délibérations, suivies avec l'attention la plus bienveillante et la plus empressée par tout ce que le Canada compte de distingué et de patriote dans le sens propre de ce mot.

La section française, sous les auspices de laquelle le Cercle littéraire se trouve plus spécialement placé, est le rempart de notre langue au Canada. C'est elle qui a la sainte garde de ses belles et glorieuses traditions; sentinelles isolées, enfant perdus dans le tourbillon envahissant et absorbant des nécessités commerciales ou utilitaires qui ne respectent ni coutumes ni souvenirs, les agglomérations littéraires ou artistiques françaises appuient de toutes leurs forces la résistance au flot montant du positivisme littéraire.

Le Cercle littéraire connaît son devoir et n'y faillira pas; je tenais au nom de ses membres de vous en renouveler l'engagement et de vous dire bien haut que vous pouvez en tout temps, envers et contre tout, compter sur nous pour la défense du "doux parler de France".

AFTERNOON SESSION (May 23rd).

In the afternoon, the President, T. C. Keefer, Esq., C.M.G., C.E., delivered the presidential address, printed in an appendix to Proceedings.

EVENING SESSION (May 23rd).

In the evening the following Canadian authors gave readings from their own writings, in prose or verse :—W. Wilfrid Campbell, Dr. Longley, Duncan Campbell Scott, Professor Clark for Rev. Frederick G. Scott, Dr. Drummond, Clive Phillips-Wolley, Dr. Fréchette and W. A. Fraser. Archbishop O'Brien, D.D., Ex-President of the society, presided, and the hall was crowded by an exceptionally large audience.

SESSION II. (May 25th.)

The Royal Society reassembled at noon for the purpose of completing business, the President in the chair.

Election of General Officers.

The Honorary Secretary read the following recommendations from the committee appointed to name general officers for the ensuing year :

1. For President, Rev. Professor W. Clark, LL.D., of Trinity University.

2. For Vice-President, Dr. Louis Fréchette.

3. For Honorary Secretary, Sir John Bourinot, K.C.M.G., LL.D.

4. For Honorary Treasurer, Dr. James Fletcher, F.L.S.

On motion of Dr. S. E. Dawson, seconded by Sir S. Fleming, the foregoing report was unanimously adopted, and the officers named therein were consequently elected to serve until the next general meeting in 1900.

Attendance and Retirement of Members.

Dr. Ells reported as follows from the committee appointed to report on the attendance of members :—

Section I. makes no change at present in its present membership.

Section II. recommends that Mr. Charles Mair be placed on the retired list.

Section III. recommends that Professor H. Callendar be placed on the retired list, as he is now a resident of England.

Section IV. makes no change in the present membership.

The committee recommend that the gentlemen named in the foregoing report be placed on the retired list.

Reports of Sections.

The following reports were made from the four sections :—

Rapport de la Section I.

Séances des 23-25 mai 1899. Présents : MM. David, DeCelles, Fréchette, Gérin, Gosselin, Marchand, Roy, Royal, Sulte, Tanguay ; aussi MM. P.-B. Casgrain, délégué de la Société littéraire et historique de Québec ; le capitaine Bernier, promoteur d'une route pour atteindre le pôle nord ; Achille Fréchette et Placide Gaudet.

Présidence de M. DeCelles.

Ouvrages lus et acceptés pour notre prochain volume :

1—M. Girouard, *Enlèvement des Iroquois à Cataracoui, 1687.*

2—M. Verreau, *Samuel de Champlain.*

3—M. Roy, *Aventures de Le Beau.*

4—M. Royal, *Débuts du Gouvernement responsable.*

5—M. Fréchette, *Félix Arvers.*

6—M. Gosselin, *Québec en 1730.*

7—M. Dionne, *Jean-François de La Rocque.*

8—M. DeCelles, *Papiers inédits relatifs au troubles du Bas-Canada.*

9—M. Gaudet, *L'Acadie en 1710-1713.*
10—M. Désaulniers, *La Chevrette.*

Le secrétaire reçoit instruction d'avertir de nouveau les membres de cette section qui ne se sont pas conformés à la règle concernant les absences, que leur nom sera mis sur la liste des membres honoraires, si leur abtention continue.

Sur la proposition de M. Fréchette appuyée par M. Royal, l'honorable Pascal Poirier est élu membre de la Société royale.

Sur la proposition de M. Roy, appuyée par M. Gosselin, le R. P. Paul-Victor Charland, des Frères prêcheurs, est élu membre de la Société royale.

Les élections pour l'année qui commence ont nommé M. Royal président de la section, M. Gérin, vice-président, et M. Sulte, secrétaire.

Le tout respectueusement soumis.

A.-D. DeCelles,
Président.

Benjamin Sulte,
Secrétaire.

Report of Section II.

The Second Section of the Royal Society of Canada make the following recommendations :—

1. That Mr. Charles Mair be placed upon the retired list.

2. That Rule 6 be suspended and that the following gentlemen be elected members of the society: Duncan Campbell Scott, Dr. W. H. Drummond, William McLennan.

The Second Section of the Royal Society of Canada beg to announce that they have elected the following officers :—

President—Rev. John Campbell.
Vice-President—Mr. Wilfrid Campbell.
Secretary—Dr. George Stewart.

"That this section recommends to the society to appoint a committee to memorialize the Government of the Dominion regarding the special claims of Miss Kingsford, daughter of the late Dr. Kingsford, F.R.S.C., to a grant to be placed in the estimates, and at the same time to suggest respectfully to the Government the propriety of also considering the case of Mrs. Lampman, widow of the late Archibald Lampman, F.R.S.C., and of making some permanent provision for similar cases."

Report of Section III.

Four meetings of the section were held. The members present were :—

Mr. Baillairgé, Prof. Cox, Mr. Deville, Dr. Ellis, Sir Sandford Fleming, Mgr. Hamel, Dr. Hoffmann, Prof. Johnson, Mr. Keefer, Principal Loudon, Mr. Macfarlane, Prof. McLeod.

The following papers were read :—

1. Presidential Address, by C. H. McLeod, M.E.

2. "The Need for a Hydrographic Survey Department for Canada (Present State of the Question)," by Professor Alexander Johnson, LL.D.

3. "The Synchronism of Terrestrial Magnetic Disturbances and Unusual Excitation in the Trails of Comets," by Arthur Harvey, F.R.S.C., (Sec. II.) President of the Astronomical and Physical Society of Toronto.

4. "Illustrations of Remarkable Tidal Undulations on January 1st, 1899," (From Recording Tide Gauges in the Region of Nova Scotia,) (with 2 plates), by W. Bell Dawson, M.A., Ma.E., Asst. M. Inst. C.E.

5. "On Van't Hoff's Freezing Point Constant for Dilute Solutions of Sodium and Potassium Chlorides and Sulphates," by Prof. J. G. MacGregor, M.A., D.Sc., F.R.S.E.

6. "Thorium and Uranium Radiation," by Professors E. Rutherford, M.A., B.Sc., and R. B. Owens, presented by Prof. Cox.

7. "Damping of Electrical Oscillations," by Harriet Brooks, presented by Prof. Cox.

8. "Notes on Frazil and Anchor Ice," by Howard T. Barnes, M.Sc., Joule Student of the Royal Society, London, presented by Prof. Cox.

Prof. Callendar having ceased to be a resident of Canada, it is recommended that he be placed on the retired list.

The section unanimously recommends that Rule 6 be suspended as far as this section is concerned and that Prof. Alfred Baker, Dr. W. Lash Miller and Mr. Frank T. Shutt, M.A., be elected members of the society.

In regard to the increase of membership in each section from 25 to 30, suggested by Council, it is the opinion of the section that it should have the power to increase its membership to 30, but that the increase should be gradual, say not exceeding two additional members each year until the whole number of 30 members be reached.

The section recommends to the society the adoption of the following resolutions :—

"That the Royal Society feels it a duty resting on them to continue to point out the importance of taking every possible means to safeguard the navigation of Canadian waters."

The officers elected for the ensuing year are :—
President—Prof Cox.
Vice-President—Principal Loudon.
Secretary—E. Deville.

E. Deville,
Secretary.

Report of Section IV.

This section submits the following report :—

It has placed on record : First, *that* the proposed enlargement of the membership of the section to a maximum of thirty, with the proviso that the election of the additional members shall be in accordance with the rules laid down in the constitution of the society. They also beg to report that there are no vacancies at present in the section.

Second, *that* Section IV. has heard with pleasure the reference made in the report of the Council to the possibility of the Government taking some steps at an early date to provide a suitable museum building for the preservation of the invaluable collections, illustrating the geology, natural history, ethnology of Canada, now so inadequately housed in the museum of the Geological Survey Department.

The following are the officers elected for the ensuing year :—
President—C. J. S. Bethune, D.C.L.
Vice-President—A. H. MacKay, LL.D.
Secretary—G. U. Hay.

Sixteen papers were presented, seven of which have been read and discussed in the four meetings of the section held up to the present moment.

G. U. Hay,
Secretary.

Resolutions Adopted.

The following resolutions were then unanimously adopted :

1. "*Resolved*, that Mr. Charles Mair and Professor Callendar be placed on the retired list in accordance with the recommendations of their respective sections." (On motion of Dr. S. E. Dawson, seconded by Mr. Deville).

2. "*Resolved*, that Père Paul-Victor Charland and Hon. Pascal Poirier be elected Fellows of the first section." (On motion of Mr. Royal, seconded by Abbé Gosselin).

3. "*Resolved*, that Dr. Drummond, Mr. Duncan Campbell Scott and Mr. W. McLennan, be elected Fellows of the second section." (On motion of Mr. W. W. Campbell, seconded by Professor Clark).

4. "*Resolved*, that Professor Alfred Baker, Dr. W. Lash Miller and Mr. Frank T. Shutt, M.A., be elected Fellows of the third section." (On motion of Professor Cox, seconded by Sir S. Fleming).

5. "*Resolved*, that a committee be appointed in accordance with the recommendation of the second section to memorialize the Government of the Dominion regarding the special claims of Miss Kingsford, daughter of the late Dr. Kingsford, F.R.S.C., to a grant to be placed in the estimates; and at the same time to suggest respectfully to the Government the propriety of also considering the case of Mrs. Lampman, widow of the late Mr. Archibald Lampman, F.R.S.C., and of making some permanent provision for similar cases; and that said committee be composed of Principal Grant, Sir S. Fleming, W. W. Campbell and Dr. Brymner." (On motion of Dr. Brymner, seconded by Mr. W. W. Campbell).

6. "*Resolved*, that the Royal Society acknowledges with cordial thanks the invitation of the Canadian Institute conveyed through Sir Sandford Fleming, to take part in the celebration of the fiftieth anniversary of the establishment of the Institute.

"The Royal Society has much satisfaction in accepting the invitation and hereby appoints a delegation consisting of the President, the Council and such members as may be able to attend on the auspicious occasion, to present the felicitations of this society on the work accomplished by the Canadian Institute, together with the warmest fraternal wishes for the continued public usefulness of the sister association." (On motion of Sir S. Fleming, seconded by Mr. Royal).

Increase of Membership.

The President reported from the select committee appointed to consider the advisability of increasing the membership of the society, that in their opinion it was expedient to make such a change as would increase each section to thirty Fellows, but that such additional increase should be limited to two members each year until the whole number reach thirty in each section.

The society then proceeded to take the foregoing report into consideration, and the following resolutions were adopted :—

Resolved, That the following amendments be made in Rule 6, respecting the election of members :

(a) That the words "twenty-five" be substituted for "twenty," and the word "thirty" be added after "increased" in the second line of the second paragraph of the said rule as printed in volume I, New Series of the Transactions, page cxvi.

(b) That the words "one or two new members annually" be substituted for "one new member annually" in the beginning of the third paragraph of the said rule.

(c) That the words "additional members" be substituted for the words "one additional member" in the second line of the last paragraph of the said rule.

(d) That the word "thirty" be substituted for "twenty-five" in the last line of the said rule. (On motion of Dr. Johnson, seconded by Sir James Edgar).

Rule 6, as amended, accordingly reads as follows :—

6. *Members.*

The Fellows shall be persons resident in the Dominion of Canada, or in Newfoundland, who have published original works or memoirs of merit, or have rendered eminent services to literature or to science.

The number of members in each section shall be in general limited to twenty-five, but may be increased to thirty if any section should so desire, in the manner hereinafter indicated. Nominations to fill vacancies in any section may be made at any time in writing by any three members of that section, and the nomination papers shall be lodged with the honorary secretary, who shall make a record of them. When the vacancy occurs, the honorary secretary shall notify the members of the section in which it has taken place, and transmit to each a printed list of the candidates nominated, at least four months before the annual or any general meeting of the society. Each member may then place a mark (X) opposite the name of the candidate for whom he votes, and return the voting paper to the honorary secretary, who shall report to the council at a meeting to be held at least two months before the annual meeting, the number of votes obtained by each candidate. Should any of these have obtained a majority of the whole section, the council shall so report to the society. Should this result not be attained, then the council may select one or more of the candidates obtaining the highest number of votes of the section, and cause the members of the society to be advised of the names of the candidates so selected, at least one month previous to the date of the annual meeting, when the election may take place by vote of the members present, or the matter be referred back to the section concerned, to select names from among the candidates nominated, and recommend them to the society for election. This selection and recommendation by the section shall be made on the first day of the meeting at 2.30 p.m., unless other-

wise ordered at that time by the section. If there be two or more vacancies the selection shall be made by a separate vote for each vacancy.

Each section shall have power to increase its number by electing one or two new members annually. The proposal to elect additional members shall be made by nominations in the usual manner, but each member of the section shall have the opportunity of voting against the election of an additional member absolutely; and if the majority of votes be against the election of an additional member, then no such member shall be elected for that year. This clause shall cease to operate as soon as the total number in any section shall have reached thirty.

There being no further business before the meeting, the President formally declared the eighteenth general session of the Royal Society closed, and the Society accordingly adjourned *sine die.*

APPENDIX TO PROCEEDINGS

MERCANTILE LIBRARY,
NEW YORK.

PRESIDENTIAL ADDRESS

By T. C. Keefer, C.M.G., C.E.

Canada with a small population and insufficient capital has nevertheless held a foremost position in the products of the Forest and the Fisheries, as well as in the quality of those cereals and fruits which attain their highest development in a northern latitude. In live stock she has not suffered by comparison with any other portion of this continent, while in dairy products she is pre-eminent. If she has not, until recently, made much progress in mineral development, it has been more from want of money than of mines. If she has been long in attaining a position as a manufacturing country, it is accounted for by the fiscal and financial conditions of a sparsely settled country, the smallness of a home market, and the competition of greater capital and out-put, and therefore cheaper production elsewhere.

Amongst the many partially developed resources of Canada, perhaps there is none more widespread or more far reaching in future results than her unsurpassed Water Power. The value of this has been enormously enhanced, first by the expansion of the wood pulp manufacture, and the introduction of electro-chemical and metallurgical industries for which this country possesses the raw material; and, more recently, in the revolution which has been brought about by success in transmitting the energy of water falls from remote and inconvenient positions to those where the work is to be done.

Electrical transmission brings the power to the work, and when the prime mover is water, we have the cheapest power, and perhaps nearest approach to perpetual motion which it is possible to obtain;—one which is always "on tap," and, like gravity, maintained without cost and applied without delay.

An examination of any good map of our broad Dominion reveals, as its most striking feature, an extraordinary wealth and remarkably uninterrupted succession of lakes and rivers, suggestive of ample rainfall, the first great requisite in the occupation of any country. This feature would be still more impressive if all the waters could be shown on the map. Over large areas only the more important rivers have been explored and delineated; while in the surveyed districts many are necessarily omitted to leave room for other information to be given.

These rivers and lakes have been the most important factors in the settlement of the country, as they formed the earliest lines of approach for the penetration and exploration of the interior, and for the exploitation of our forests. The lumberman followed the trapper and the fur trader, the axe supplanted the rifle, and thus the country was opened up by men who knew not only where to begin, but, by their calling, were best equipped as pioneers.

The frontier, where not already occupied by the French, was necessarily rapidly settled in the first place by the Loyalists of 1776, who could not stand upon the order of their departure after their homes were confiscated. These found the rivers their earliest friends from whence they obtained the means of shelter and of employment in the only industry by which money could then be obtained, viz., the floating of timber and potash to Montreal and Quebec.

Over a length of several thousand miles between Labrador and Alaska and over a width of several hundred miles, there is an almost continuous distribution of lakes, lakelets and rivers;—the lakes of varied outlines, dimensions and elevations above sea level, and many possessing facilities for the storage of their flood waters. This power of storage has been largely taken advantage of by lumbermen to retain the needed supply for their spring "drive" into the main stream. In many places the outlet from the lake, or the connection between a chain of lakes, is a narrow cleft in rock where an inexpensive dam will hold back the water supplied by the winter's accumulation of snow.

With the exception of her prairie region, the rivers of Canada differ from the Mississippi, Missouri and Ohio, and the larger part of their tributaries, in that they are not naturally navigable from their mouths, or above tidal influence to any considerable extent, except in detached sections; while the former are navigable for thousands of miles and are therefore without water power. Those great western rivers flow upon a nearly uniform grade of a few inches per mile, whilst the St. Lawrence and its tributaries are interrupted by rapids, chutes and cataracts, affording a great variety, quantity and quality of water power.

In the United States, between the Atlantic coast and the Rocky Mountains, as far south as the Gulf of Mexico, and as far north as the Dakotas, (with the exception of part of New York and New England) there is an entire absence of lakes; while throughout Canada, north of the St. Lawrence and stretching northwest toward the Mackenzie River Basin, these are innumerable, in fact have never been numbered, and thousands of the smaller ones have never been represented on any map.

The upper sections or sources of most of the Canadian rivers are chains of lakes, occupying in many instances the greater portion of the

water course. These head waters are often upon nearly the same elevation and interlocked with the sources of other rivers flowing in opposite or different directions, and separated by narrows necks of land at a low "divide," rendering diversion from one to another possible, a feature which has in some places been utilized by lumbermen fearless of any legal injunction.

This terrace-like profile of the rivers and their frequent expansion into lakes, often dotted with islands, not only enhances the beauty of the scenery, but, for utilitarian purposes, constitutes a series of elevated natural mill ponds, containing latent power of unknown extent and value, awaiting that demand upon them which is now being made in consequence of the discovery that our second rate forest growth which has hitherto served chiefly to ornament their shores and islands, has become the most important, and can be ground into pulp and rolled into paper to meet the ever increasing demands of the newspaper, the bookmaker, and the innumerable forms into which wood pulp can be compressed for useful or ornamental purposes,—or as a substitute for wood or metal.

These steps from high to lower levels in every rivulet, branch, tributary or main stream of nearly every one of our northern rivers produce more or less broken water which never freezes over but remains open during the coldest weather, giving an alternation of closed and open water sections, of ice covered lakes and of broken water in rapids, which may cover miles in extent, as well as at chutes or cataracts with more or less open water above and below them.

It is an interesting question for specialists to determine what effect, if any, this often large percentage and almost general distribution of open water during the coldest weather (of which every stream large or small has a portion) may have in modifying the extremes of temperature in these northern latitudes. When all the ground is frozen solid and covered with a deep mantle of snow, extending over the lakes and checking increasing thickness of their ice covering, large bodies of water are impounded and maintained at a temperature above the freezing point, although there may be fifty degrees of frost in the air, and are constantly poured forth into this frigid atmosphere.

It is conceded that our Great Lakes modify the temperature of their border lands, and although these open water spaces in our northern rivers may be inferior in surface, they exist on every river having rapids or falls, and extend over such a vast field that their aggregate area must be very large. Unlike the Great Lakes these open spaces are constantly receiving fresh supplies of warmer water to temper the severity of the air. Such "breathing holes" (as they are sometimes called) are nec-

essarily comparatively shallow, and are the only places, after all other water is frozen over, where "anchored" ice is formed and found. This differs from lake ice in that the latter melts where it freezes, while anchor ice, when compelled by milder weather to let go its hold upon the bottom, rises, and is immediately drawn under the fixed ice below, and does not dissolve until the river breaks up in the spring. The latent heat of water, disengaged in freezing,—which process occurs so frequently during the five months of winter,—is imparted to the atmosphere, but is not again absorbed by melting ice, as would be the case in lakes, or in deep sluggish rivers.

Again, radiation is supposed to play an important part in "anchoring" the floating particles of ice to the river bottom, which is said to be cooled so rapidly by the ice laden current above it as to become frozen, and then begin to attract the passing ice needles, and fix them to its bed.

If mother earth, in mid-winter, contributes any of her impounded heat to the outer atmosphere, these almost innumerable unfrozen spaces certainly offer great facilities for giving vent to her suppressed emotions.

WATER POWER.

From the Straits of Belle Isle to Montreal, and thence ascending the Ottawa, the tributaries of the St. Lawrence and of the Ottawa descend, through the Laurentian region, from elevations of 1,800 to 1,000 feet above tide, and debouche within a few miles of each other except immediately about the Saguenay. In many cases they bring their principal cataracts very near their outfall, notably in the case of the famous Falls of Montmorency, which, leaping directly into the St. Lawrence from a height of 250 feet, are utilized to light the streets and drive the tram cars of Quebec.

Somewhat similar conditions exist on the south shore of the St. Lawrence until the Richelieu river (the outlet of Lake Champlain) is reached, where at Chambly, water power is about to be used to send the electric current into Montreal in competition with steam and a similar water power from the Lachine Rapids.

The divide between the St. Lawrence and the Ottawa is studded with lakes, west of the Rideau Canal, a principal outlet for which,—on the south,—is the River Trent, discharging into the Bay of Quinte, with large mills and much undeveloped water power at its mouth : and on the north, some half a dozen important tributaries discharging into the Ottawa.

At Sault Ste. Marie, a water power canal fed from Lake Superior supplies the largest pulp mill yet erected in Ontario, and a similar work at the Lake of the Woods (which lake is 1,000 feet above tide) gives power to the largest flour mill in the Dominion. The waters of the Winnipeg river (the outlet of the Lake of the Woods) descend about 300 feet, unused, into Winnipeg Lake, adjoining Lake Manitoba, from whence the water system extends to the Saskatchewan, and thence via Athabasca, the Great Slave and the Great Bear Lakes, to the Arctic circle.

No reference has been made to the long established water power in the older districts, on the Saguenay, or those between Montreal and Quebec, and upon the Ottawa, nor to the more recent and extensive pulp and paper establishments;—it being the object of this paper to draw attention to the continuity and broad distribution of water power across the continent, on Canadian territory, and to the unnumbered natural reservoirs of water at elevations which impart to them latent powers for the future development of this country.

British Columbia has not been included in this field, because its occupied portion is separated by our great prairie region from the lake system of Eastern Canada, which system is deflected toward the northwest at the Lake of the Woods. This province is by no means deficient in water power, although it has been little used as yet where mines are on high levels, and because steam could be more readily applied. On the other hand, it is the only province in which hydraulic mining is in operation; and where gold is found in quantity sufficient to warrant the great outlay of capital necessary in connection with that system.

In the Kootenay, water wheels, with or without electrical transmission, are necessary for water power, in order to mine, pump, and crush the gold bearing rocks; but in the Cariboo district, water power is applied in the simplest form, without wheels or wires, by direct pressure from a nozzle, as is done in Ottawa from a fire hydrant.

While the mountains south of the Canadian Pacific Railway are rich in metallic veins, the region north of this railway extending into the Arctic Circle, appears to be a veritable land of Havilah, a continuous "Placer" gold field, in which much of the precious metal is to be obtained by hydraulic mining, wherever that is practicable.

This gold field, over a thousand miles in extent between the Fraser and Yukon Rivers, and of unascertained width, has been exploited at Cariboo, (from whence fifty million dollars has been taken), at Cassiar and Omenica, and recently at Atlin, all in British Columbia;—as well as in the far famed Klondike, in the Yukon district, said to be the richest gold field in the world.

Water, in whatever way it is used, is necessary to the recovery of this gold, but in many places water power alone will profitably unearth it

from its hidden recesses. This is collected in quantity from lakes, and reservoirs on the high levels, and carried for miles by ditches, aqueducts and flumes, to the banks of a primeval, deserted river channel, at the bottom of which, under forest covered clay banks, lies the auriferous gravel studded with boulders and resting on the bed rock. Under a head of about 300 feet "six inch rapid fire" hydraulic guns are pointed against the bank, breaking down the earth, uprooting trees, scattering boulders and washing out the gold—which remains in the traps set for it in the bottom of the sluices after all else has been carried off by the power of the water.

These "machine guns," called "giants" and "monitors," are models of simplicity as well as of ingenuity and efficiency. While working they are great consumers of water,—and can only be used when the ground is unfrozen, but this season is generally sufficient to use up all the water which can be collected at the necessary elevation.

It requires at least two men to hold and direct the force of the issuing stream from an Ottawa fire hydrant, but a boy can direct the movement of a stream, twenty times greater in quantity and fifty per cent stronger in pressure, as it rushes forth from the nozzle of one of these "giants",—which is fixed to a well secured platform, and moved forward as the bank in front of it melts away.

A thin short tube, of larger diameter, projects beyond the nozzle to which it is fixed by gimbals, so that the tube can be moved independently, both horizontally and vertically, to touch the issuing stream, which immediately recoils from the obstruction, moving the "giant's" nozzle in the opposite direction. Thus a boy "behind the gun" can control its movement and compel the "giant" to fall back upon his own resources for motive power.

HORSE POWER.

It is impossible to give anything but an approximate estimate either of quantity or value of the available water power over so vast an area, because the first would involve the survey of every power site; and, as to the second, the value begins when the power is wanted.

All which now can be done is to state the conditions and endeavour to estimate the quantity, hypothetically. What is needed for an estimate is the quantity of water and the amount of fall which can be relied upon at the site for each power. To get the first, a measurement of the minimum flow at each point would be necessary in low water years, and for the second, some local knowledge as to river levels, back water, etc.

In the absence of such surveys we must fall back upon the average rainfall of the whole region as far as that can be procured for any time,

and assume the proportion of this precipitation (of rain and snow) which, after deductions for evaporation, the demands of vegetation, or infiltration, would reach the wheels. An allowance must also be made for that portion of the rainfall which may be carried off in floods.

The area over which this precipitation would be in reach for water power purposes, would embrace all the main land of Canada south of the St. Lawrence, as well as all north of it in the St. Lawrence valley, and so much of the Hudson Bay and Mackenzie River watersheds as can be utilized, or imported by transmission.

As regards the power of the water thus estimated, we must embark in a much more speculative estimate as to the average fall which should be assigned to it for the whole region. We have in the undeveloped districts some scattered meteorological observations to assist us in estimating probable rainfall, and we have also a few barometrical observations giving the height above sea level of summit waters. On lower levels we have more numerous rain gauges, and summit levels ascertained by railway surveys.

For the whole river the total fall may be less than 100 feet, as in the case of the French river which has Lake Nipissing for a mill pond, or rise to 1,500 feet or more as at the rivers below Anticosti. In the case of the French river (which is the lower part of a longer stream) we have surveys, and know that its whole fall can be utilized, as would be done if it is made navigable by locks and dams. In the others (where no surveys have been made) some will be more or less like French river, while at others only a portion of the total fall upon them may be profitably utilized. The most valuable will be those which, like Montmorency, bring all their water with sufficient head to the point where it is worth most. The upper sections of the rivers will be the least valuable, as having less water and being more remote until reached by a new railway, or a transmission wire.

The chief difficulty with respect to the quantity of water is the want of rain gauges over so great an extent of unoccupied territory. Where the rainfall is known, the proportions which reach the streams have been ascertained in connection with reservoirs for water supply and other purposes. We can therefore only state a hypothetical case especially as to the power to be assigned to the available water.

Assuming, however, an average annual precipitation of twenty-four inches and taking one-half of this as available for water power, every ten square miles would yield an average of nearly one horse power for every foot of fall. A million square miles (and there is much more) would give nearly 100,000 horse power for every foot of fall. As there would be several hundred feet of fall which could be utilized, our water

power must be immense,—and commensurate with this country in other respects.

The above applies only to the tributaries of the St. Lawrence and the Ottawa, and to the northern watersheds so far as these may be utilized. The Canadian portion of the water power of the St. Lawrence, from Lake Superior to Montreal, in which there is a fall of 546 feet, is not included, being below the level of the tributaries.

We have measurements of the flow in both the St. Lawrence and the Ottawa in cubic feet per second, as follows :

	c. ft. per sec.
In St. Mary's river, outlet of Lake Superior.....	80,000
In St. Clair river, outlet of Lake Huron.....	225,000
In Niagara river, above the falls.....	265,000
In St. Lawrence river above the rapids.....	300,000
In Ottawa river, above Lake of Two Mountains.....	35,000

Canada's share of the St. Lawrence water power from Lake Superior to Montreal would be about ten million horse power.

Canada has half the water of the St. Lawrence from Lake Superior to Cornwall, and all of it between Lake St. Francis and Montreal; but only a portion of this half could be utilized,—and this would apply more or less to the Ottawa and other rivers, where all the power could not be utilized without an expenditure probably beyond its value.

The power at Niagara has been estimated at seven million horse power, from less than half of the fall between Lakes Erie and Ontario, but the flow of the Niagara River, as given above, does not support so high an estimate. The whole of this fall (over 320 feet) can be utilized on the Welland Canal, but the quantity is comparatively insignificant, from the limited channel and necessarily low velocity of the current in it.

In like manner the whole fall upon our canals in the St. Lawrence can be utilized subject to the limitations imposed by the requirements of navigation. Because these canals have not had the work for which they were intended, they have in some cases become mill races rather than slack water channels. This has been the less felt, hitherto, on account of the lightness of their west bound traffic, the strong current toward the mills being in favour of the deeper laden east bound craft, thus incidentally compensating for a violation of canal maxims.

While water power was at first the only substitute for the windmill in new countries, and its economy as well as superiority has always been recognized, several causes have contributed to limit its more general application. Before the invention of the turbine in the first half of the present century heads exceeding about seventy feet could not be utilized on account of the comparative weakness and excessive cost of wheels of

large diameter. In these days of structural steel, and "Ferris" wheels, this difficulty could be overcome; but, with the turbine, the conditions are reversed, the higher the head the less the size and cost of wheels, so that the most valuable water powers were the most cheaply utilized in this respect.

A previous check to the greater extension of water power was given in the latter part of the last century by James Watt's discovery of the steam engine, which by bringing the power to the work, to the city, and to the mine, revolutionized industrial conditions.

A still greater revolution has recently occurred which brings water power to the front again, by its amalgamation with electricity, whereby its economical power is transferred to the work, over many miles of distance, upon a single wire.

Within the last ten years high voltage electricity has been firmly established with annually increasing power of extension, and this has brought Canada into the first rank of economical power producing countries. Water is thus represented by a power to which it can give birth, but which is superior to its own, in that, where ever transplanted, it can do nearly all the parent power could do, as well as give light, heat and greater speed: moreover it has given rise to industries only possible with abundant cheap electricity. What is more important to us is that such industries are those for which Canada possesses the raw material, but which, without water power, she could not engage in.

There are important industries in which we have for some time utilized water power—for which electricity is not indispensable—but which equally require large amounts of cheap power, and are capable of indefinite extension : but while these may not need the intense electric current necessary for electro-chemical industries, they will find electrical transmission of inestimable value in many situations ; while, for lighting and heating purposes, water power is invaluable to all.

Heretofore we have cut our spruce into deals and exported it to Europe, and more recently into pulp wood and exported that to the United States ; but, manufactured by our water power into paper, the raw material would yield this country ten times the value it is now exported for.

The extension of railways combined with electrical transmission, will promote the local manufacture of such wood products (including all valuable hard wood) as can bear transportation; thus giving the largest amount of local employment, as well as tonnage to the railway; and delivering us from the position of "hewers of wood" for other countries.

ELECTRICITY.

In order to present more fully the recently enhanced value of our Canadian water power, some reference is necessary to certain properties of electricity, the power which has happily been described as "the most romantic form of energy" by Wm. Henry Preece, C. B., F. R. S., in his recent address as President of the Institution of Civil Engineers.

Inasmuch as the cost of production of electrical energy depends upon continuity of output, water power must be the ideal one for this purpose, at least until some cheaper power is discovered. In some places where steam is now used for electric light other industries have been added to secure the more continuous use of the power in daylight hours.

The only quality in which any deficiency has been exhibited by electricity is for lighthouse purposes, a lesser power of penetration in fogs, in which respect it is inferior to oil or gas: but even this, has in the present year, been more than compensated for by the successful application of "wireless telegraphy", by which, in any weather, communication between the ship and the shore can be established. The shores of the St. Lawrence from the Atlantic to the Lakes are lined with water power which can be used to light, in fair, or protect, in foul weather, the passing vessel; to ring the bell or blow the horn.

When water is applied for light and power purposes its economy is always the important factor; but it is chiefly to its value for electro-chemical industries that Canada will look to reap the greatest benefits, because, in these it is not merely a question of competition of power producers, but one in which intense electricity has the monopoly, and in the case of some of them, as in the production of aluminium, calcium carbide, carborundum, liquid air, etc., their existence depends upon ample supplies of an intense electric current, for the generation of which abundant and cheap water power is indispensable.

Touching electro-metallurgical processes Mr. Preece says :

"Every electrolyte requires a certain voltage to overcome the affinity between its atoms, and then the mass decomposed, per minute or per hour, depends solely upon the current passing. The process is a cheap one and has become general. Three electrical H. P., continuously applied, deposits 10 lbs. of pure copper every hour, from copper sulphates, at the cost of one penny. All the copper used for telegraphy is thus obtained. Zinc in a very pure form is extracted, electrolytically, from chloride of zinc produced from zinc blende, in large quantities. Caustic soda and chlorine are produced by similar means from common salt. The passage of electricity through certain gases is accompanied by their dissociation, and by the generation of intense heat. Hence the arc

furnace. Aluminium is thus obtained from cryolite and bauxite. Phosphate is also separated from apatite and other mineral phosphates. Calcium carbide, obtained in the same way, is becoming an important industry."

"Electrical energy can be generated on a coal field where coal, of good calorific value, is raised at a cost of three shillings per ton, cheaper than by a water fall, even at Niagara."

Eastern and Western Canadian coal fields are separated by thousands of miles, but water power is abundant throughout nearly all this coalless region.

Our western coal fields are vast and their market at present limited. If coal can be raised cheaply enough and the raw material for the work be discovered in the neighbourhood, they may give rise to electro-chemical and electro-metallurgical industries without the intervention of water power.

The commercial production of calcic carbide (acetylene gas), by electrolysis, is the discovery of Mr. T. L. Wilson, (a grandson of the late Hon. J. M. Wilson of Saltfleet, Ontario,) who has established works on the water powers of the Welland Canal and has shipped this product all round the world.

The electric production, commercially, of caustic soda and chlorine is under the patent of Mr. Ernest A. Lesueur, son of the Secretary of the General Post Office Department, Ottawa. This manufacture is now being carried on by a Boston company at a New England water power.

MINING.

There is another field nearly as widespread as our water power in which electricity is destined to play a most important role, and this is mining, which is now spreading over the Dominion with the same rapidity as the utilization of our forests for pulp and paper purposes. Over this area, from the Atlantic to the Pacific, minerals have been discovered and in many cases tested and successfully worked, and from recent results we appear to be on the threshold of remarkable developments in this direction, especially as so small a portion of so great an area has been prospected sufficiently for mining purposes.

For power purposes alone, electricity is invaluable in mines, and its multifarious uses (as enumerated by Mr. Preece) are "for moving trams and for working hoists: it lights up and ventilates the galleries, and, by pumping, keeps them free from water. It operates the drills, picks, stamps, crushers, compressors, and all kinds of machinery. The modern type of induction motor, having neither brushes nor sliding contacts, is

free from sparks and free from dust. Electric energy is safe, clean, convenient, cheap, and produces neither refuse nor side products."

The Canadian mining districts are well supplied with water power, and all the wonderful effects of electricity are available for us upon a larger and more economical scale than elsewhere.

In connection with this abundance of water power, and from the fact that an important proportion is now situated remote from existing railways and settlements, the question of profitable limit of electrical transmission is most important,—if indeed it be now possible to put a limit on anything connected with electricity, with or without the aid of a wire. If, as reported, Lord Kelvin has placed the profitable limit at 300 miles, this is sufficient to utilize the greater part of the water power upon the two watersheds north of the St. Lawrence River.

Professor Elihu Thomson says "Up to the present time it was practicable to transmit high pressure currents a distance of 83 miles using a pressure of 50,000 volts. If a voltage higher than that were used the electricity would escape from the wires into the air in the form of small luminous blue flames."

As showing how far we are yet behind nature, Prof. Thomson says the estimated voltage from a lightening discharge ranges from twenty to fifty million volts.

Wherever the raw material for electro-chemical, electro-metallurgical, or other industries, affords sufficient inducement, and the water power is at hand, the forest will be penetrated much more rapidly than heretofore, and settlements advanced in new directions.

What can be done in this direction is best illustrated by the development of a single industry in the wilds of Minnesota north of Lake Superior, and adjoining Canadian territory. Over four hundred miles of standard gauge railways have been built, through what was a trackless wilderness in 1885, to reach iron ore beds, the ore from which is shipped to Lake Erie and thence again railroaded 200 miles into Pennsylvania. This one business has, in mines, railways, docks and fleets of steamers, required an investment of $250,000,000, and has led to as low a rate, by water, as 1 cent per bushel for wheat between Chicago and Buffalo, and 20 cents per ton for coal from Lake Erie to Duluth, nearly 1,000 miles. One-half of the charcoal iron, and more than half of the pig iron made in the United States, is smelted from Lake Superior ore.

ELECTRIC RAILWAYS.

The substitution of electricity for steam, as the motive power for railways, is regarded as inevitable sooner or later on many roads. It has already taken place as regards suburban railways, notably in the case of

the Charlevoix road and Hull and Aymer railway, where water is doing the work which has heretofore been done by coal. The chief obstacles to an early change on the larger roads are the hundreds of millions invested in locomotives, and the very large outlay required to equip existing steam roads with the electric system. The principal inducement would be the passenger service, owing to the increased speed possible,—it being confidently stated that, with electricity, a speed considerably over one hundred miles per hour could be attained. Moreover there would be entire abolition of the poisonous smoke which drops upon the Pullman in preference to any coach ahead of it.

While the conversion of trunk lines would be attended with a cost which is for the present prohibitory, this objection does not apply to new lines which may be worked independently, or in connection with electric ones. When the time arrives for such railways, water power will have a field of usefulness of which we can at present form little conception. Water wheels and wires would displace the coal docks, the coal laden vessels, the huge coal yards, and the trains required for distributing their contents over hundreds of miles of lines.

An interior line connecting Lake St. John, on the Saguenay, with Lake Temiscamingue, on the Ottawa, which could ultimately be extended, via Missanabi, Nepigon, and Lac Seul to the Saskatchewan, would be a colonization road—removed from the frontier—one which could be worked possibly altogether by water power, and would open a virgin tract in which electro-chemical and electro-metallurgical industries might arise, as well as those connected with the products of the forests and the mine.

TRANSPORTATION.

The more extended use of our water power, in the immediate future, for manufacturing and mining purposes, especially for the electro-chemical and metallurgical productions, naturally leads to the consideration of the character of the output, especially with regard to markets, and transportation problems generally.

Transportation, next to production, is the most important commercial question to a country of vast distances, and low priced products affording great tonnage such as we produce, and for which we have expended hundreds of millions in canals and railways, harbours, lighthouses and steamers,—a sum disproportioned to our realized wealth, as it certainly is to our population. But, *noblesse oblige,* we possess a vast estate, are compelled to develop it—and await results.

The question of transportation determines, to a great extent, the existence, or otherwise, of a possible industry, and enhances or diminishes

the value of every article of export just in proportion to its efficiency and economy. On the other hand, where transportation is necessarily expensive, cheap production may maintain an industry;—and here is where our abundant water power may come in.

The geographical position of Canada in relation to the commercial centre of gravity of the North American continent is at least noteworthy. This centre is very near Lake Erie. From the western end of this lake the water route to the Atlantic, at the Straits of Belle Isle, follows the general direction of a great circle which cuts the commercial heart of Europe, and is therefore upon the shortest route, or "air line". Our two peninsulas, Sarnia-Detroit and Sault Ste. Marie, which are the railway gates of the Lake region, afford the most direct routes to the Atlantic for all the North-western States, and are traversed by the trunk lines of railway. From Lake Erie water communication on the largest scale extends through Lake Huron to the extremities of Lakes Michigan and Superior. One-third of the population of the United States are dependent upon the Great Lakes, largely as to exports and imports, and wholly as to rates,—which are fixed by the water for the rail routes.

One-half of the population of the United States is found within a radius of 400 miles from Cleveland, a Lake Erie port claimed to be second only to the Clyde as a ship building one, and also the largest iron ore market in the world.

The paper and pulp industry as well as some of the electro-chemical and metallurgical ones (to the present list of which many additions may be made) are distinguished by the large tonnage produced, the output of several pulp mills exceeding one hundred tons per day. For this the St. Lawrence is the natural route for exportation, and to it this heavy tonnage is of the greatest importance as a means of attracting "tramps" as well as liners during the open season.

Increase of sea tonnage into the St. Lawrence is essential to our inland commerce: by it only can sufficient west bound freights be secured to attract a proper share of the commerce of the Lakes, after all has been done to give to the latter quick despatch at Montreal or Quebec.

There is probably no place in the world where inland transportation is carried on with greater expedition and economy than in the valley of the St. Lawrence. This is due to the character of the inland navigation, unequalled elsewhere, and to the influence which this exerts upon the railways competing with it: and also, because the valley of the St. Lawrence is not only the greatest highway for agricultural products, but of mineral ones, as well as of the products of the forest and the fisheries.

More than half of the iron ore produced in the United States is mined around Lake Superior. Into this lake an increasing number of

railways are pouring the produce of the vast wheat fields between it and the Rocky Mountains, and thus placing this grain within a thousand miles of Montreal, which is the nearest seaport by hundreds of miles, and the only one which can be reached by vessels capable of navigating the lakes.

Wheat grown in the foot hills of the Canadian Rockies has already reached Lake Superior by an all rail haul of fifteen hundred miles, a distance considered prohibitory in the early days of railways, as one which would absorb the whole value in the cost of carriage.

The all-rail rate for wheat from Edmonton, on the North Saskatchewan at the foot of the Rocky Mountains, to the Atlantic at St. John, N.B., 2,937 miles on the Canadian Pacific Railway, is 33 1-3 cents per bushel, equal to 0·38 of a cent per ton per mile. The lake and rail route between the same points is 93 miles shorter, with at least two transfers of the grain, and the rate three cents per bushel less, or ·35 of a cent per ton per mile.

The rate from Edmonton to Lake Superior, 1,458 miles all rail, is 31½ cents per 100 pounds, and to Montreal, 2,456 miles all rail, 56½ cents. The lake and rail route to Montreal, 2,363 miles is 46½ cents per 100 pounds, 5 cents per 100 pounds or 3 cents per bushel less in favour of lake and rail, against all rail whether to Montreal or to St. John, N.B.

The lateness of harvest in our Northwest, and the early closing of navigation in the St. Lawrence, will soon over-tax all our means of transport, both water and rail, during the interval between September and December. The Welland and St. Lawrence canals and the portage railways between Montreal and Lake Huron constitute the Canadian routes, and much, which cannot reach Montreal in time for export, will be stored up at nearest lake ports for winter railway carriage to tide water warehouses on the St. Lawrence, for export at Atlantic ports,—or for conversion into flour at Ontario and Quebec water powers.

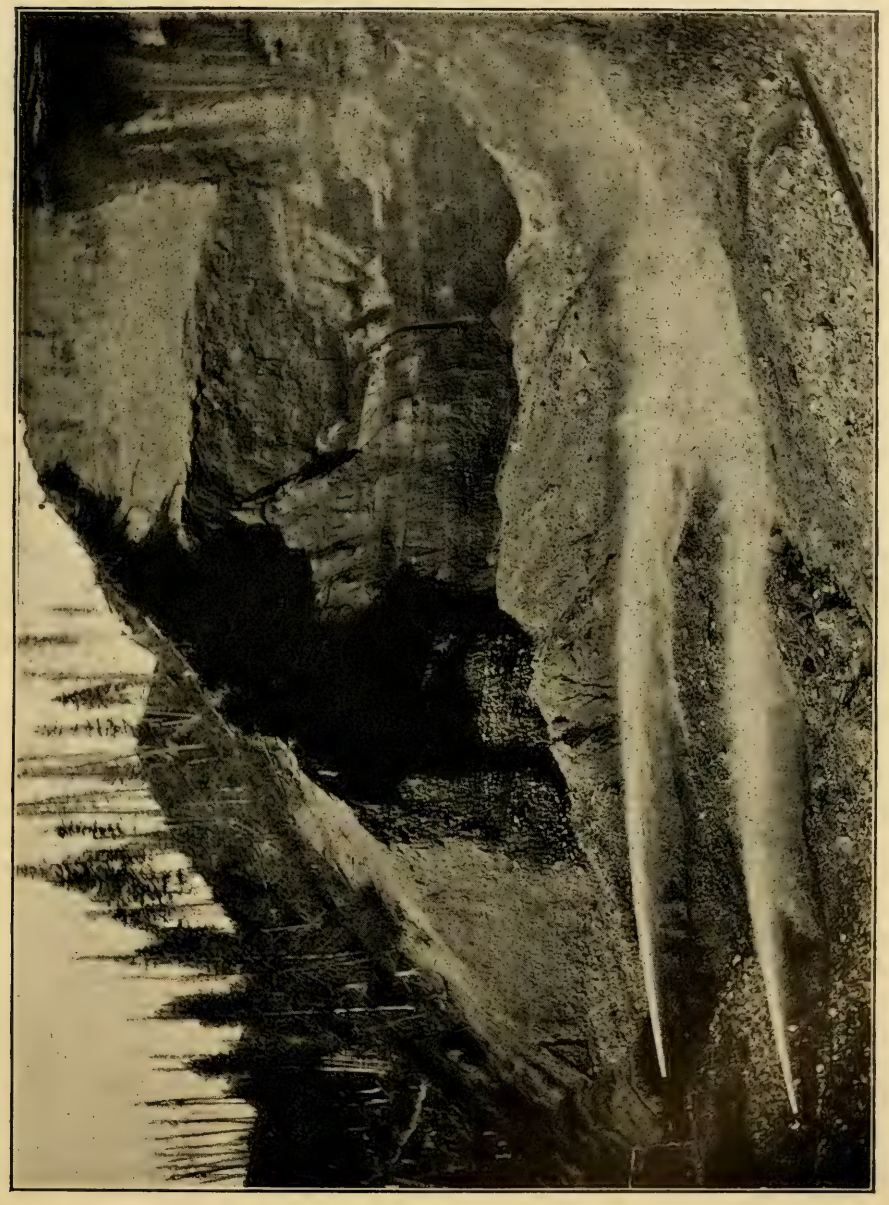
What is looming up before us in the Canadian Northwest may be seen from the growth of the grain trade in Manitoba and our territories, where, already, storage capacity for twenty million of bushels has been provided in over five hundred elevators and warehouses between Lake Superior and the Rocky Mountains ; and where there are over sixty mills with a grinding capacity exceeding ten thousand barrels daily. From these the estimated export of wheat, including flour, in 1898, was given at thirty millions of bushels by the Winnipeg Grain and Produce Exchange. The crop of 1899 is estimated from forty to fifty millions of bushels.

This accumulating tonnage from our western plains and our eastern forests must call for a proportionate extension of export facilities which should attract tonnage to the St. Lawrence. Already Montreal has eighteen regular lines of steamers to transatlantic ports, exclusive of tramps. New York alone of the Atlantic ports exceeds this in number. Montreal has five regular lines to Liverpool and the same number to London, two lines to Glasgow and two to Hamburg, and one each to Bristol, Manchester, Belfast and Antwerp. Baltimore has twelve regular lines of steamships to Europe, Boston nine, and Philadelphia eight. No doubt all these Atlantic lines exceed Montreal in number and tonnage of vessels as well as in cargo carried, as they have twelve months navigation against seven for the St. Lawrence. The real significance of Montreal's eighteen regular lines of steamships is the demonstration, that, in spite of climatic drawbacks, or inferiority in other respects, the St. Lawrence is the route towards which northern exports will gravitate during its open season.

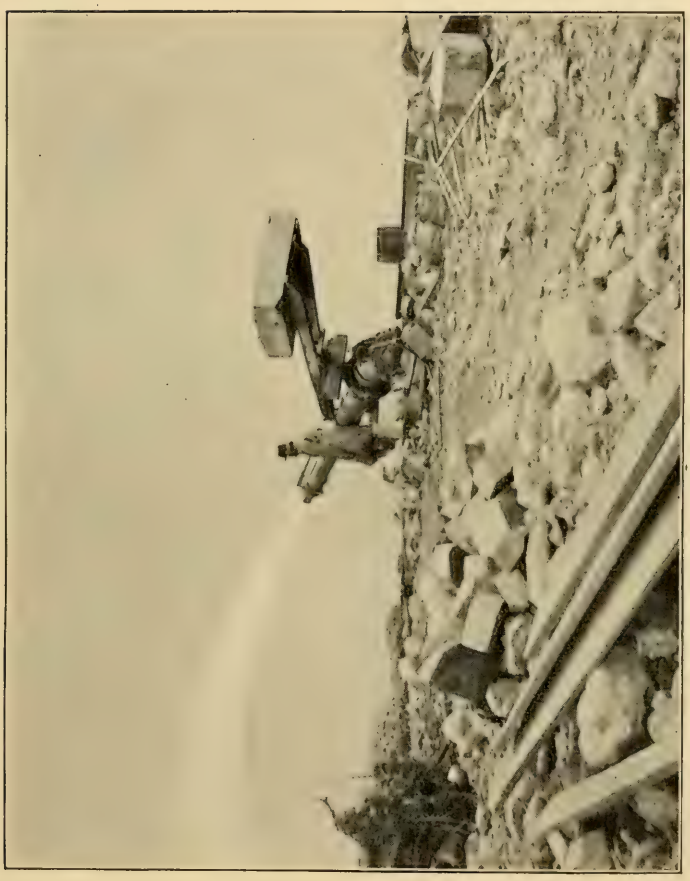
The "Water Power" map has been prepared by the Surveyor-General of the Dominion, E. Deville, F.R.S.C., under instruction from the Hon. the Minister of the Interior.

I am indebted to the Director of the Meteorological Service, R. F. Stupart, Esq., for the tables of mean annual as well as minimum precipitation of rain and snow in all provinces, excepting British Columbia. Some of these figures are printed upon the map, in blue, to distinguish them from others in black showing the height of lakes, so far as known, above tide level.

The map will not be engraved in time to be bound with the "Transactions," but will be distributed later.



PAIR OF GIANT 7-INCH NOZZLES AT WORK AT CARIBOO HYDRAULIC MINE.



GIANT, WITH 8-INCH NOZZLE, AT WORK 70 FEET FROM BANK (CLOSE QUARTERS)
CARIBOO HYDRAULIC MINE.

CLEANING UP THE AMALGAM FROM SLUICES, CARIBOO HYDRAULIC MINE.

APPENDIX.

Hydraulic Mining.

The extraction of gold from soils, as distinguished from veins in the solid rock, has been carried on most extensively for the past fifty years upon the Pacific coast of the United States and Canada, and what is known as hydraulic as distinguished from "placer" mining has been brought to great perfection there. California has been more systematically explored and her resources estimated in this respect than Canada. Those of Canada are yet but partially known, but the probability is that they will prove far greater. According to the State Mineralogist, California has already produced over one thousand millions of dollars in gold from her auriferous gravels—in the working of which over one hundred millions of dollars have been invested. This gold was obtained from the beds of ancient rivers where it is found covered with drift and forest, which must be washed away by the power of water, before it is reached. California has four hundred miles of these ancient water courses, estimated to contain an average of two millions of gold per mile, or $800,000,000 in all. Besides those which may be called "free milling" deposits, there are ancient channels where the gold is found in cemented material and cannot be washed out; and, again, there are one thousand miles of ancient channels in which the gold is "lava-capped" and can only be reached by "drifting" for it. These lava-capped channels are estimated to contain $500,000,000.

For hydraulic mining the power canal or "ditch" should have an elevation of at least one hundred feet above the working level; and this may be increased to five hundred feet without becoming unmanageable. The higher the head the farther it will throw an effective stream, and such head is necessary when working against a high bank in order to secure a safe distance for the "giant" attacking it.

The elevated ditch terminates in a large wooden tank called the "pressure box," which feeds the pipe descending the slope to the field of action. This pipe is constructed of wrought iron or steel sheets,

the strength proportioned to the head of water, rivetted with a double row on the straight seams and single on the round. According to Mr. Hobson, General Manager, Cariboo Hydraulic Company, iron is preferable to steel, because the latter is often of uneven temper, having hard spots which break in bending ; besides which steel is more readily attacked and eroded with rust than even the common quality of sheet iron. The best quality of sheet iron has had, in hydraulic pipes, four times the length of life of the best quality of steel.

The sections are made up in lengths of fifteen to eighteen feet, such as can be conveniently handled by two to four men as the pipes may vary from fifteen to thirty inches in diameter ; and are put together on the ground "stove-pipe fashion," caulked by sacking and driven home by a wooden ram, eight inches diameter by six feet long."

Though not frequently exposed to the pressure due to the hydrostatic head, these pipes are strong enough to resist this when necessary. Mr. Hobson states that "such iron pipe has been in use for years under a tensile strain of 13,000 pounds to the square inch, although," he adds, "most authorities would hardly admit this factor of safety." He gives the safe pressure for the three sizes of pipes used by his company as follows :

Gauge. B.G.	30 in. Diameter.	22 in. Diameter.	18 in. Diameter.	15 in. Diameter.
No. 14 Steel or Iron.....	150 ft. head	210 ft. head	252 ft. head	305 ft. head
No. 12 " "	230 " "	310 " "	385 " "	460 " "
No. 10 " "	300 " "	420 " "	505 " "	600 " "

These pipes, which are bell-mouthed, should be as large in diameter as can be afforded, to lessen the friction and increase the force of the issuing stream, and because their size must be decreased in approaching the giant so that here they can be easily handled by man power, in the frequent changes of position necessary.

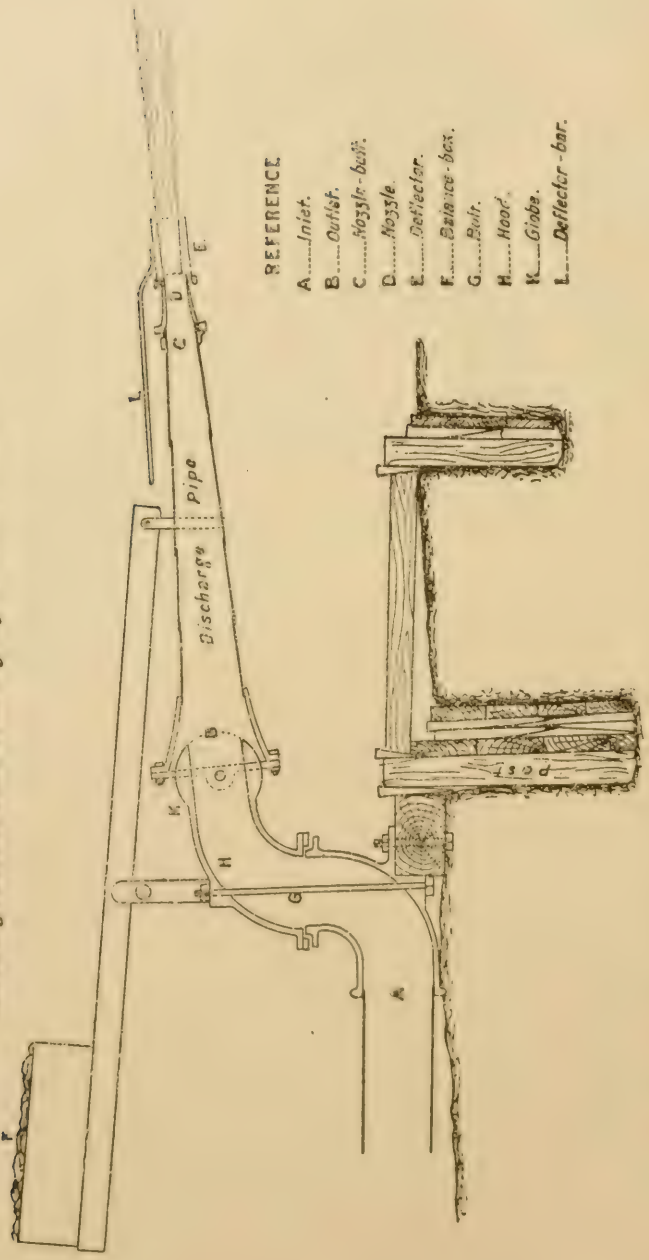
Sheet iron pipes treated by immersion in a hot bath of asphalt have been in use in California, some for more than a quarter of a century, and are subjected to great pressures as shown in the following table, published by the Joshua Hendy Machine Company, San Francisco :—

Locality.	Diam. Inches.	Thickness of iron.		Pressure.	
		B.G. No.	Inches.	Head in feet.	Lbs. per Sq. in.
Moore's Flat	12	14	.083	400	173
San Juan	16	18	.049	200	86
Spring Valley Water Co	30	11	.125	365	158
Cherokee	30	00	.375	887	384
Virginia City Water Co	11½	0	.324	1720	750
French Corral	22	10	.134	430	186
Malakoff Diggings	22	10	.134	450	194
Texas Creek	17	8	.165	760	329

THE GIANT.

The illustration shows the most improved pattern in "giants," in which the horizontal movement is around a bolt, made of the best quality of steel and thoroughly annealed, which holds in position the two cast-iron sections connecting the wrought-iron feed and discharge pipes. The vertical movement is provided for by a globe joint connecting the discharge pipe with the uppermost of the cast iron sections. The nozzle is cast iron attached by a screw thread, removable at will, as nozzles of various sizes are made to fit the same "butt" on any giant.

The nozzles range from six to ten inches in diameter, and Mr. Hobson says :—"A small stream, six to seven inches, is more effective in cutting down the banks ; and a large stream of eight, nine or ten inches is the most effective for removing the caved gravel into the sluices." The balance box is essential and is never omitted in giants of any size. The giant is anchored to the floor of the hydraulic pit as shown in the sketch with the addition of side posts at the end of the wooden bed piece in order to prevent a side movement. The greatest force is a thrust, by impact, of water at the angle, and if the giant can be prevented from moving at the forward thrust it will generally remain in place. Care must be taken to secure solid ground for the fastening posts, and in wedging the bulkheads at the front and at the ends of the "giant" bed piece, in order to withstand the enormous pressure from a discharge of fifty to seventy-five cubic feet of water per second under a head of several hundred feet. The discharge at the nozzle is very close to the theoretical in good machines connected by large pipe



Double-jointed, ball-bearing Hydraulic Giant.

AS USED BY THE CARIBOO CONSOLIDATED HYDRAULIC MINING COMPANY, QUESNELLE FORKS, B.C.

lines with the ditch, and will probably average 93 per cent of the theoretical discharge.

At the Cariboo mine a pipe line 1,000 feet in length is composed of a length at entrance of about fifty feet, tapering from forty-eight to thirty inches, forming the bell mouth, then 200 feet of thirty-inch pipe, and the remainder twenty-two inch to within a short distance of the giant.

The "deflector" at the end of the nozzle, which controls the movement of the giant is a simple cylinder of about two inches larger diameter than the issuing jet, swung, at its rear, in a joint similar to the gimbals on a marine compass. A lever is attached to this deflector of sufficient length to enable a boy, entering on his teens, to bring the cylinder into firm contact with the issuing jet, which then swings itself right or left, up or down as required. On letting go the lever the deflector swings free from the stream.

Water is usually measured on the Pacific coast by the "miner's inch," which varies in different localities; but the most widely used one is "the quantity of water that will flow from an orifice one inch square through a two-inch plank with still water standing at a depth of six inches above the top of the orifice,"—which quantity is 2,274 cubic feet (about 17,000 American gallons) in twenty-four hours. The duty of this inch is the washing of one and a half to four and a half cubic yards, according to locality and quality of material.

LAKE SUPERIOR IRON.

The Lake Superior ore beds of the United States have yielded 134,000,000 tons, of which 117,000,000 tons have been mined since 1882. The quantity mined in 1898 was 14,000,000 tons, the greatest of any one year, and more than half of the total mined in the United States in that year.

The production of pig iron in the United States in 1898 was 11,773,934 tons; the principal producing States being:—

Pennsylvania	5,500,000 tons
Ohio	2,000,000 "
Illinois	1,500,000 "
Alabama	1,000,000 "

The greater portion of the above was Bessemer pig, of which Pennsylvania produced 4,000,000 tons, Ohio 1,500,000 and Illinois 1,200,000, the last two having the higher proportion. Lake Superior ore and Pennsylvania coke meet at Chicago. About one and two-thirds to two

tons of ore and one ton of coke made a ton of pig iron. The production of coke at Connellsville, near Pittsburg, Pa., is about 170,000 tons per week. This coke, which is free of duty, has been delivered in Lake Superior by rail and water at $4.25 per ton, while "Pittsburg" coal (from which it is made) has been laid down there by water at $1.85 alongside wharf, subject to duty of fifty-three cents per ton. About one and three-quarter tons of Connellsville coal are required to make a ton of coke. It may require nearly two tons of inferior coal to make one ton of coke.

Nova Scotia coal, water borne, is the only Canadian coal which might be used in Lake Superior; but as long as a supply of charcoal can be obtained it will probably yield a better quality of iron at a smaller cost per ton than any other fuel.

The iron ore deposits on the Canadian side of Lake Superior are said to be the most extensive known ; it is asserted that two million tons are in sight on a single quarter section in the Atikokan belt. The quality is both hematite and magnetite, and chiefly Bessemer ore.

I am indebted to Dr. George Dawson, Director of the Geological Survey, for the following account of Canadian ore west of Lake Superior:

Iron ores are widely distributed throughout the district west of Lake Superior. They occur in rocks of Keewatin (Huronian) age as magnetites and hematites and in the Animikie as carbonates and hematites. The principal belts are one extending from the Kaministiquia River westerly up the valley of the Matawin River and continuing to beyond the Township of Moss, and another following the course of the Atikokan and Seine Rivers.

Along the first of these, outcrops of ore have been found at many points, but notably in the neighbourhood of the Matawin River, where extensive deposits of both magnetite and hematite (hard ores) have been partially exploited by open trenching and by the diamond drill. Though generally considerably banded with jasper, large deposits of clean ore occur here. On the Atikokan belt the ore is a high grade magnetite averaging over sixty per cent metallic iron. Along the Atikokan, the eastern part of the belt, the ore carries no titanium and but a trace of sulphur, and is consequently a good Bessemer ore. It occurs in long, lenticular masses which swell out to widths of upwards of fifty feet and which are vertical or nearly so in attitude. Three or more roughly parallel bands of ore are separated by belts of country rock (diorite and hornblende schist) from twenty feet to a few feet in width. The whole width is often considerably over a hundred feet and the bodies of ore which can be followed as recurring lenticules for many miles are traceable as continuous ore bodies for upwards of 500 yards. (See Annual

Report Geol. Survey, 1895, pp. 38 R and 83 S, et seq., for assays and description.)

Ore has been discovered at numerous other localities throughout the district, notably in the Gunflint Lake district just north of the International boundary, at the head of the Big Turtle River and on the north shore of Thunder Bay near Loon Lake. In none of these places, however, are the deposits as extensive as those noted above.

The Matawin area is about thirty miles from Port Arthur and five miles from the nearest point on the C. P. Railway. It is on the line of the Port Arthur and Rainy River Railway, now under construction.

The most extensive ore deposits on the Atikokan are about 100 miles from Port Arthur and forty miles from the C. P. R. This area is also on the line of the Port Arthur and Rainy River Railway.

Other iron ore deposits, chiefly hematite, have been discovered upon the north shore of Lake Superior and east of Nepigon, at Batchewaning Bay, Gros Cap and Little Pic, and are referred to in many reports of the Geological Survey from 1866 to 1876, but their extent and value is yet unknown.

PULP WOOD—AND THE WOOD PULP INDUSTRY.

According to "Lockwood's Directory" there are over one thousand pulp mills in the United States, and less than one hundred in Canada, but of the thousand, one hundred are idle ; while of the ninety-three Canadian mills only four are idle, one in each of the provinces of Ontario, Quebec, New Brunswick and Nova Scotia. Of the greater proportion of idle American mills some, are no doubt, closed for want of raw material, because the home product is being rapidly exhausted and importation is necessary. Canada has supplied some of these with both pulp wood and pulp. There is nearly as much difference, commercially, to an exporting country, between its wood pulp and pulp wood, as between the traditional horse chestnut and chestnut horse,—they are not convertible terms ; and there would be a still greater difference if we turned our wood into pulp and the pulp into paper at our own water powers. The same reason which exists for cutting pine logs into sawn lumber in Ontario holds good for turning our spruce logs into pulp and paper, throughout the Dominion.

Ontario, Quebec, Nova Scotia and New Brunswick possess an almost unlimited quantity of spruce of the strongest and finest quality for papermaking. It is claimed for this spruce (not only as against that of the Pacific Coast, but as against that of Europe), that its flocculent fibres

possess an interlocking edge like bearded barley which seize hold of each other when passing rapidly from the floating to the fixed position, and can consequently be driven at a higher rate of speed through the machine than other kinds of spruce wood. The other woods for pulp-making, in order of value, are balsam, poplar, soft maple, basswood and tamarack, all abundant in Canada. Spruce and balsam are not only at the head of the list on account of their intrinsic value, but because they reproduce themselves more rapidly than others; this, in the case of spruce, being estimated to range between ten and twenty years according to situation.

"Lockwood" gives the Dominion list of mills under the two heads of paper mills, and pulp and chemical fibre mills. Their reported capacity for Ontario is a daily output of :—

Paper mills	172,000	lbs.
Pulp and chemical fibre mills	743,000	"
Total	915,000	"
For Quebec :		
Paper mills	564,000	"
Pulp and chemical fibre mills	493,000	"
Total	1,057,000	"

Nova Scotia has a paper mill of 8,000 pounds daily capacity, and Nova Scotia and New Brunswick have pulp and chemical fibre mills; the first with 174,000 pounds, and the second with 160,000 pounds daily capacity.

Numerous and varied as are the qualities and uses of pulp and wood paper, its abundance and cheapness have given it an extended field in architecture, in addition to the ornamental one, especially for a cold climate. By its use the cheap wooden houses can be made warmer than brick or stone ones ; and in many of these there is a greater surface of paper than of wood used, as it is doubled round the sides, and can be used to cover both roof and carpeted floor. The paper mills advertise their output as book, ledger, news, bag, tissue, manila, wrapping, writing, hardware, carpet lining, roofing, building, wall, leather board, binding, etc.

The other uses to which both chemical and mechanical wood pulp are put are varied and increasing, as in furniture, carriages, hollow ware of all kinds, water pipes, portmanteaus, horse shoes, bottles, clothing, paving blocks and fire and water-proof compositions. In the latter connection a most extensive and important field will be found in water-proof underground conduits for electric wires.

Mechanical pulp is wood ground in water ; chemical pulp, the same wood digested or cooked in sulphurous acid, or, by a soda process, filtered

and refined, and is, therefore, worth three or four times as much as the raw product. The cooked article is used almost exclusively to improve the quality of the raw.

The wants of the United States are said to be the product of one hundred thousand acres annually. If this estimate be now excessive it must soon be reached and passed. One New York paper is reported to use the product of seven acres for its daily issue.

It is stated that owing to the expansion of this industry the greatest source of revenue in Sweden is derived from her forests ; and that the Government are purchasing the private ones in order to secure their protection.

RAINFALL.

In the following tables the most noticeable feature is the small amount (as compared with the eastern provinces) of total precipitation with which Manitoba and the Northwest Territories produce such magnificent crops of cereals, dairy products and vegetables, as well as horses, beef, and bacon.

Wheat is there sown over a frozen subsoil which gradually yields its moisture to the influence of the sun, inciting and sustaining growth until the rain (more than half of which falls in the summer months) brings the grain to maturity. Of the total precipitation, nearly 75 per cent is rain between 1st April and 1st October, the remainder falling (chiefly as snow) during the other six months.

In these tables—stations in the watershed of the Great Lakes are placed together in alphabetical order for their respective lakes.

MEAN ANNUAL PRECIPITATION—RAIN AND SNOWFALL—IN INCHES, AS OBSERVED AT ALL STATIONS IN CANADA EXCEPTING BRITISH COLUMBIA.

STATION.	Mean Annual Precipitation.	Least Amount of Precipitation in one year	STATION.	Mean Annual Precipitation.	Least Amount of Precipitation in one year
MANITOBA.			NORTHWEST TERRITORIES.		
Aweme	16·19	12·29	Banff	19·44	.....
Brandon	16·20	9·35	Battleford	13·62	11·61
Burnside	14·96	11·46	Calgary	12·98	7·91
Cartwright	17·49	14·16	Chaplin	7·07	3·47
Channel Island	15·20	13·97	Edmonton	15·15	8·16
Clandeboye	16·70	12·01	Fort Chippewayan	11·05	10·09
Clarkleigh	18·10	14·32	Fort Dunvegan	23·23	15·27
Eden	17·14	11·19	Grenfell	13·49	10·05
Fort Ellice	16·07	10·48	Kilnap	11·67	6·31
Foxton	17·64	11·88	Maple Creek	10·18	7·73
Gladstone	20·51	18·15	Medicine Hat	12·69	6·72
Hartney	23·35	. ...	Prince Albert	14·45	9·59
Hillview	19·29	12·46	Qu'Appelle	15·89	10·14
Minnedosa	17·08	11·62	Regina	9·03	1·90
Norquay	22·26	14·33	Swift Current	17·04	9·66
Oakbank	20 24	15·28	Moose Factory	26·47	24·93
Oaklake	19·50	8·53	Norway House	19·26	15·74
Pilot Mound	18·74	14·25			
Portage la Prairie	18·84	13·89			
Posen	21·84	17·39			
Rapid City	15·78	5·94			
Rockwood	18·07	15·16			Proportion of Snow, Inches.
Russell	18·04	14·07			
Shell River	15·37	8·57			
Shoal Lake	12·90	11·50	Abitibi, 1897	20 in.	78·2
Sourisford	13·57	10·41	Do 1898	33 in.	121·8
Stony Mountain	13·94	8·25	York Factory	28·73	14·34
Treherne	19·09	11·53			
Turtle Mountain	20·40	17·52			
Winnipeg	20·92	14·84			

MEAN ANNUAL PRECIPITATION—RAIN AND SNOWFALL—IN INCHES AS OBSERVED AT ALL STATIONS IN CANADA EXCEPTING BRITISH COLUMBIA.—*Con.*

STATION.	Mean Annual Precipitation.	Least Amount of Precipitation for one year.	STATION.	Mean Annual Precipitation.	Least Amount of Precipitation for one year.
ONTARIO.			ONTARIO—*Con.*		
Biscotasing	20·45	16·23	Little Current	31·92	20·88
Cartier	29·51	23·42	Listowel	36·01	29·81
Heron Bay	24·04	18·74	Lucknow	38·42	30·46
Missanabie	22·74	17·94	Midland	36·95	35·20
Nepigon	16·34	15·07	North Bruce	32·79	27·42
Port Arthur	34·38	19·12	Orangeville	30·51	28·31
Savanne	24·74	19·43	Orillia	32·71	22·23
Schreiber	24·98	.....	Owen Sound	38·74	30·63
Sault Ste. Marie	36·26	30·21	Parry Sound	37·73	32·62
White River	25·52	13·35	Point Clark	31·30	22·67
Ailsa Craig	33·42	29·84	Presqu'ile	40·46	32·65
Aurora	28·61	22·06	Saugeen	34·17	27·25
Axe Lake	29·46	23·80	Seely	40·26	35·44
Alton	30·45	27·32	Sharon	29·36	25·98
Barrie	30·33	21·22	Sprucedale	35·32	30·80
Beatrice	42·40	28·09	Stayner	32·93	26·03
Bognor	38·35	29·17	Sunshine	36·91	32·03
Charlinch	38·68	29·22	Thetford	32·74	29·86
Coldwater	32·55	29·70	Uplands	41·90	32·69
Durham	40·42	29·86	Whiteside	36·18	32·01
Egremont	33·31	23·59	Wiarton	34·37	32·14
Georgina	28·36	21·93	Zurich	37·18	29·68
Goderich	32·64	17·32	Aylmer	36·92	32·43
Goderich (L'gt House)	33·39	14·17	Birnam	35·64	27·67
Granton	36·45	26·28	Blenheim	38·73	30·15
Gravenhurst	30·06	28·22	Brantford	26·25	18·73
Gwillimbury	25·06	22·68	Chatham	31·87	23·64
Haliburton	29·66	25·46	Coldstream	35·38	34·44
Hoodstown	43·02	39·61	Conestogo	31·72	22·03
Joly	36·51	31·78	Copetown	32·91	25·96
Kincardine	34·88	28·83	Cottam	33·73	25·57

MEAN ANNUAL PRECIPITATION—RAIN AND SNOWFALL—IN INCHES, AS OBSERVED AT ALL STATIONS IN CANADA EXCEPTING BRITISH COLUMBIA.—*Con.*

STATION.	Mean Annual Precipitation.	Least Amount of Precipitation for one year.	STATION.	Mean Annual Precipitation.	Least Amount of Precipitation for one year.
ONTARIO—*Con.*			ONTARIO—*Con.*		
Cowal	31·73	25·69	Woodstock	33·67	26·47
Dealtown	33·49	26·62	Wyoming	29·25	25·43
De Cewsville	32·47	20·72	Welland	33·05	25·87
Elora	34·18	29·17	Haileybury } Nipissing District	32·02	27·13
Fergus	36·32	28·68			
Galt	31·25	24·87	Belleville	31·42	28·78
Guelph	25·99	21·86	Bobcaygeon	27·71	22·55
Ingersoll	33·15	26·11	Brampton	29·07	21·00
London	36·84	27·45	Deseronto	33·03	20·95
Lyons	35·07	27·57	Ennismore	35·83	30·67
Maidstone	29·28	24·47	Georgetown	28·98	24·25
Oil Springs	28·97	25·47	Hamilton	30·39	19·17
Otterville	32·52	24·67	Harrowsmith	32·75	26.38
Paris	33·30	27·41	Kingston	33·14	26·03
Petrolia	34·36	20·88	L'Amable	35·52	31·88
Point Pelee	33·16	29·17	Lakefield	29·80	22·13
Port Dover	32·54	22·46	Lindsay	33·26	26·50
Port Stanley	34·79	27·02	Minden	32·85	30·07
Princeton	32·74	26·54	North Glanford	22·73	21·31
Ridgetown	34·07	29·19	Niagara Falls	34·41	30·75
St. George	32·56	26·83	Norwood	31·35	24·44
St. Marys	37·63	30·73	Oshawa	31·81	27·05
St. Thomas	31·22	28·83	Port Dalhousie	30·55	25·41
Sarnia	27·23	22·69	Port Hope	32·25	28·85
Strathroy	34·59	33·99	Peterboro'	31·65	20·19
Stratford	38·30	28·20	Scarboro'	29·00	26·36
Simcoe	31·09	20·97	Stony Creek	36·83	32·74
Sombra	33·72	28·01	Shannonville	27·72	25·22
Wilton Grove	30·70	24·74	Toronto	31·52	24·34
Windsor	29·66	25·66	Arnprior	36·92	32·43
Watford	25·42	24·06	Alexandria	37·92	30·19

MEAN ANNUAL PRECIPITATION—RAIN AND SNOWFALL—IN INCHES, AS OBSERVED AT ALL STATIONS IN CANADA EXCEPTING BRITISH COLUMBIA.—*Con.*

STATION.	Mean Annual Precipitation.	Least Amount of Precipitation for one year.	STATION.	Mean Annual Precipitation.	Least Amount of Precipitation for one year.
ONTARIO—*Con.*			QUEBEC—*Con.*		
Bancroft	35·06	32·15	St. Francis	38·36	36·18
Brockville	36·66	29·39	St. Hyacinthe	37·91	29·66
Cornwall	30·66	25·47	NOVA SCOTIA.		
Clontarf	32·48	27·31	Port Morien	39·39	30·45
Denbigh	33·72	26·11	Digby	29·90	22·30
Edwardsburg	38·62	31·95	Glace Bay	47·75	40·97
Fitzroy Harbour	25·52	21·55	Halifax	52·20	45·32
Mattawa	25·66	18·80	Port Hastings	45·15	31·14
Northcote	25·96	22·49	Pictou	42·62	32·36
Oliver's Ferry	30·80	22·49	Sydney	44·00	40·85
Ottawa	32·87	25·63	Sable Island	44·20	32·77
Pembroke	38·87	19·71	Truro	43·28	36·89
Renfrew	25·01	17·54	White Head	44·42	36·63
Rockliffe	30·44	22·10	Yarmouth	49·57	36·04
QUEBEC.			PRINCE EDWARD ISLAND.		
			Charlottetown	41·45	32·45
Anticosti, S. W. Pt.	27·74	13·44	Georgetown	40·08	35·48
" W. Pt.	41·32	34·49	Kilmanagh	39·53	30·54
Barnston	40·25	36·45	NEW BRUNSWICK.		
Bird Rocks	27·51	17·67	Bathurst	35·62	23·52
Brome	32·99	21·41	Chatham	41·26	32·03
Cape Magdalen	32·22	26·68	Dorchester	44·96	33·16
Chicoutimi	30·33	24·42	Dalhousie	36·06	27·15
Cranbourne	46·77	36·34	Fredericton	44·55	36·89
Danville	40·09	31·26	Grand Manan	46·72	35·20
Father Point	32·19	19·03	Point Escuminac	32·35	.....
Huntingdon	37·13	30·38	Parker's Ridge	46·01	39·81
Montreal	40·23	30·88	Point Lepreaux	46·48	38·00
Point des Monts	45·70	30·92	St. Andrews	39·46	30·04
Quebec	41·68	31·70	St. John	47·38	42·65
Richmond	40·69	33·87	Woodstock	40·76	35·26

MONTHLY PRECIPITATION AT FOLLOWING STATIONS IN MANITOBA IN 1898.

STATIONS.	JAN.	FEBY.	MAR.	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
	Snow.	Snow.	Snow.	Rain.	Rain.	Rain.	Rain.	Rain.	Rain.	Rain.	Snow.	Snow.
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches	Inches.	Inches.	Inches.	Inches.
Rathwell	4·2	6·9	17·4	1·58	0·29	6·72	2·96	0·96	1·03	.....	.....	.....
Turtle Mountain	1·7	3·5	8·5	.....	0·20	2·84	4·60	2·46	1·80	4·40	9·5	1·00
Pilot Mound	5·5	5·00	13·00	1·12	0·62	3·42	2·92	1·15	1·04	4·30	5·00	4·00
Belmont	.....	.....	.....	1·80	0·10	3·51	4·17	2·21	0·71	3·00	.....	0·00
Morden	3·00	2·00	8·00	0·65	0·70	6·40	1·07	0·68	2·40	3·50	8·00	4·00
Mary Hill	9·5	1·5	17·7	0·86	0·24	2·63	4·64	1·27	2·23	3·34	11·2	8·00
Pembina Crossing	.....	.....	9·5	0·71	0·70	2·85	1·95	1·35	.....	3·63	.....	.....
Rapid City	4·00	.....	24·00	.....	0·74	2·29	5·60	2·71	2·45	3·41	9·00	.....
Hartney	.....	5·00	13·00	0·78	0·72	4·26	5·22	3·92	2·37	2·21	10·5	1·00
Norquay	.....	6·5	10·3	0·83	0·34	5·20	3·06	1·68	0·98	2·30	11·3	5·00
Beaver Creek	.....	.....	.....	0·50	1·15	3·43	2·60	1·33	0·84	3·10	.....	.....

The light rains of April and May (seed time) the heavy rains of June and July (growing time) and the lighter ones in August and September (harvest) are noticeable. The average annual rainfall of Palestine is more than double that of Manitoba but it all falls in winter between October and April.

ELECTRIC RAILWAYS.

Under present conditions the superiority of the electric current to steam, as a prime mover, is confined to positions where it is required to move a single car or two, frequently, instead of a large number at wider intervals. For the current the power is generated at a central station, and must at all times be equal to any demand upon it ; while in the other case it is self-contained in the locomotive engine, the number of which may be increased or diminished as occasion requires.

An electric installation to produce the same power as the best locomotive will cost nearly ten times as much as the single engine, and can only compete economically with the latter where the demand for power is continuous. Where a single locomotive could do the same work, the interest upon nine-tenths of the cost of installation would handicap the electric system.

When coal is used to produce the electric current, the cost per horse-power produced is the same as for the locomotive. When water power can be obtained the fuel cost is saved ; but, since this item forms less than 20% of the operating expenses of a railway, the amount saved may be fully offset by interest charges upon the cost of electric installation, including that of the water power.

For urban and suburban passenger traffic there is no comparison in efficiency, economy, comfort and safety to passengers, between electricity and steam : moreover, the frequency of cars and absence of cinders and smoke lead almost immediately to a very decided increase of traffic. On the other hand, a breakdown at the central station puts an immediate and total stop to traffic, while a disabled locomotive would be dragged off or replaced by another. Grades up to 10% and above are surmounted by the electric car—because there is a motor under every car—while less than half this is the practical limit on steam roads. A steam motor could mount the same grade, but would require a licensed engineer and a dangerous boiler to every car.

For heating purposes electricity requires 25 times the horse-power needed to produce the same heat by steam: for tram-cars it will always be preferred on account of greater convenience and cleanliness; and because of the moderate amount necessary, as compared with houses. It will always be used for these cars when water power supplies the current—and should be even with coal generation.

We cannot foresee the future of this question. If the heavy locomotive which carries no paying load, can be got rid of—lighter rails and bridges than are now called for can be used ; and if the momentum of trains can be utilized to produce the electric current, every car may be

provided with a storage battery for emergencies. Length of trains and strength of couplings would be reduced and speed increased, the reciprocating piston of the steam cylinder being unable to compete with the rotating electric motor;—the limitations being only air resistance and condition of track.

SOCIETE ROYALE DU CANADA

MEMOIRES

SECTION I

LITTÉRATURE FRANÇAISE, HISTOIRE, ARCHEOLOGIE, ETC

ANNEE 1899

I—*Québec en 1730—Relation de ce qui s'est passé à Québec, en Canada, ville capitale de la Nouvelle-France, à l'occasion de la naissance de Mgr le Dauphin.*

Par M. L'ABBÉ AUGUSTE GOSSELIN, docteur ès lettres.

(Lu le 24 mai 1899.)

La vénérable Marie de l'Incarnation nous apprend, dans une de ses lettres, que, lorsque le roi de France eut repris le Canada, des mains de la compagnie des Cent-Associés, en 1663, il exigea de ses sujets canadiens un acte d'allégeance : " Il s'est fait, dit-elle, rendre foi et hommage généralement de tous les habitants du pays, qui ont confessé tenir du roi à cause de son château de Québec[1]." Ce serment de fidélité fut reçu par M Gaudais-Dupont ou les agents nommés par lui. Gaudais-Dupont était le commissaire chargé de prendre possession, au nom du roi, de toute la Nouvelle-France.[2]

Je n'ai vu nulle part que cet acte d'allégeance ait été renouvelé dans la suite, pas même après la mort du monarque qui l'avait exigé en 1663 : ni la Régence, ni Louis XV ne paraissent l'avoir réclamé. Seuls les seigneurs avaient à comparaître au château Saint-Louis pour y rendre foi et hommage. La loyauté du petit peuple canadien à la couronne de France pouvait-elle être mise en doute ? Il en donnait, de lui-même, tous les jours des marques incontestables. On vit bien quelques particuliers—la mère de l'Incarnation en mentionne un ou deux—[3] trahir leur pays et se mettre au service de l'Angleterre ; mais c'étaient de rares exceptions. En général tous les cœurs, au Canada comme en France, battaient à l'unisson, et s'harmonisaient dans un délicieux concert d'attachement à la patrie française et au monarque qui l'avait faite si grande et si glorieuse.

Rien de touchant comme le souvenir du Canadien d'autrefois pour sa France bien-aimée. Ce souvenir le suit partout, dans ses courses aventureuses à travers les bois, dans ses expéditions contre les ennemis de la colonie, dans ses travaux domestiques. Afin d'entretenir plus chaudement dans son âme le culte de la patrie absente, et de se faire illusion à lui-même sur son exil, il tâche, à l'exemple des anciens Troyens,[4] de se créer une petite France, image de l'autre, sur cette plage lointaine et glacée de l'Amérique : ce ruisseau qui coule en murmurant près de sa

[1] *Lettres de Marie de l'Incarnation*, édit. Richaudeau, t. II, p. 267.

[2] *Edits et Ordonnances*, t. III, p. 22.

[3] *Lettres de Marie de l'Incarnation*, t. II, pp. 293, 447.

[4] Sollemnes tùm fortè dapes, et tristia dona,
Antè Urbem in luco, falsi Simoëntis ad undam,
Libabat cineri Andromache, Manesque vocabat
Hectoreum ad tumulum.... (*Enéïde*, liv. III.)

demeure, ce vallon plantureux qui s'étend à ses pieds, cette montagne qui ombrage son champ, il leur donne des noms empruntés au pays qu'il a quitté. Bien mieux, c'est quelquefois à son propre foyer, c'est à ses enfants qu'il confie la tâche de perpétuer autour de lui le souvenir de la patrie absente : témoin le brave Charles LeMoyne, qui, entouré de dix enfants pleins de promesses, tous de futurs héros, leur attribue à chacun le nom de quelque hameau ou canton voisin de Dieppe,[1] son pays natal, de manière à avoir toujours présente à ses yeux l'image de sa chère Normandie.[2]

La loyauté des Canadiens pour la France éclate surtout lorsque la flotte du printemps leur apporte des nouvelles d'outremer : ils pleurent, si elles sont attristantes ; ils se réjouissent, si elles sont glorieuses et favorables à la patrie. Nos archives sont à ce sujet des témoins irréfragables : elles nous redisent, souvent avec éloquence, les sentiments de loyauté de nos pères. Que de *Te Deum*, par exemple, chantés avec enthousiasme, dans nos églises canadiennes, à l'occasion des victoires remportées par la France sur ses ennemis, ou des traités qui couronnèrent le succès de ses longues et laborieuses campagnes ! que de démonstrations de joie, que d'actions de grâces pour des événements qui intéressaient de près ou de loin la grandeur de la patrie française !

" Nous avons fait, suivant les ordres de Sa Majesté et les vôtres, un feu de joie pour la naissance du prince des Asturies[3] ; et comme il y avait en ce port un petit bâtiment de La Havane, qui était venu ici chercher des farines, nous nous sommes efforcés de faire connaître aux Espagnols combien nous sommes sensibles à leur joie. Nous avons aussi fait un feu de joie, et fait tirer le canon, et assisté avec le conseil supérieur au *Te Deum* qui a été chanté dans la cathédrale pour la prise de *Lérida*." [4]

A la mort de Louis XIV, Mgr de Saint-Vallier écrit un de ses plus beaux et plus touchants mandements, pour ordonner des prières en sa faveur, et célébrer la mémoire " de ce prince, dit-il, dont Dieu avait formé le cœur de ses mains, en le remplissant d'un esprit de religion et de piété pour lui tout extraordinaire, et d'amour pour ses peuples." [5]

J'ai trouvé dans nos archives une Relation, que je crois tout à fait inédite, des réjouissances qui eurent lieu à Québec, en 1730, à l'occasion de la naissance du Dauphin, fils aîné[6] de Louis XV et de Marie Leczinska.[7]

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[1] Longueuil, Châteauguay, Bienville, Iberville, Maricourt, Sérigny, etc.

[2] Faillon, *Histoire de la Colonie française*, t. III, p. 350.

[3] Arrière-petit-fils de Louis XIV, fils de Philippe, duc d'Anjou, dont l'accession au trône d'Espagne avait été cause de la guerre de succession d'Espagne.

[4] Lettre de Vaudreuil au ministre, 5 novembre 1708.—Lérida, ville de la Catalogne, sur la ligne de Saragosse à Barcelone. Le grand Condé, qui avait assiégé cette ville en 1647, avait échoué. Le duc d'Orléans fut plus heureux le 8 avril 1707.

[5] *Mandements des Evêques de Québec*, t. I, p. 490.

[6] L'aîné des garçons : il y avait eu trois filles avant lui. Le Dauphin était né le 4 septembre 1729.

[7] Il y avait eu un *Te Deum*, en 1726, à la cathédrale de Québec, à l'occasion du mariage du roi, et le gouverneur y avait assisté.

Je l'offre aujourd'hui bien humblement à la Société royale. C'est une brillante mise en scène des sentiments de loyauté qui animaient nos pères à l'égard de la France, et spécialement à l'égard du monarque, qui, trente ans plus tard, paraît avoir fait si facilement son deuil de la perte de notre colonie, lorsqu'il se vit obligé de la céder à l'Angleterre.

En lisant cette Relation, on est forcé de s'écrier : " Ah ! comme l'histoire se répète !.... Mais ces fêtes, ces dîners, ces soirées, nous en étions.... Cette illumination, ce feu d'artifice sont d'hier, nous y avons assisté...." C'est que le caractère du peuple canadien, à Québec surtout, n'a pas changé. Sa loyauté à la couronne britannique s'exprime aujourd'hui de la même manière qu'elle se manifestait autrefois à l'égard du roi de France ; elle a changé d'objet, mais pour le fond elle est restée la même, cordiale, enthousiaste, expansive.

Le Dauphin, dont les Québécois célébraient la naissance en 1730, était, dit-on, un prince accompli : à l'âge de seize ans, il se faisait remarquer par son courage intrépide " à la fameuse journée de Fontenoy (1745) ". Mgr de Pontbriand écrivait de lui en 1753 : " Il fait les délices et l'espérance de la France ; elle attend tout de lui, et il peut tout attendre d'elle." [1]

Malheureusement il ne monta jamais sur le trône : il mourut en 1765 neuf ans avant son père, le roi Louis XV. Mais il fut le père de trois rois, Louis XVI, Louis XVIII, Charles X, dont les noms gravitent, au firmament de l'histoire de France, autour de ce grand astre qui s'appelle Napoléon Ier, dans la zone si tourmentée de la Révolution. Que de grands événements, que de souvenirs se rattachent à la fête patriotique dont je donne ici la Relation !

Cette Relation est officielle : elle fut envoyée à la cour par le gouverneur et l'intendant de l'époque. Je la donne ici textuellement, telle qu'elle est, et la ferai suivre de quelques détails sur les principaux personnages qui y sont mentionnés, sur les communautés religieuses, sur l'aspect physique et social, à cette époque, de la capitale de la Nouvelle-France, qui fut le théâtre de cette fête patriotique.

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" Le premier avril 1730, M. le marquis de Beauharnais, gouverneur et lieutenant général pour Sa Majesté, en cette Nouvelle-France,[2] eut avis, par la Nouvelle-Angleterre, de l'heureux accouchement de la reine, et de la naissance de Mgr le Dauphin. Il le fit annoncer au public par une décharge de l'artillerie du château Saint-Louis,[3] de la citadelle et des

[1] *Mandements des Evêques de Québec*, t. II, p. 101, mandement au sujet de la convalescence du Dauphin, Trois-Rivières, 12 juillet 1753.

[2] Sa commission est datée de Marly, 11 janvier 1726. (*Edits et Ordonnances*, t. III, p. 67.)

[3] Il y avait une batterie de vingt-deux canons, comme on le verra plus loin.

autres forteresses, et donna des ordres pour le faire savoir dans toutes les villes et forts de cette colonie.

"La cathédrale et les communautés[1] l'annoncèrent au son de toutes les cloches, et chantèrent le *Te Deum*. M. le gouverneur général, l'intendant Hocquart, le conseil supérieur, les officiers de la juridiction et les ordres de la ville y assistèrent. Tous les peuples y donnèrent des marques singulières de la reconnaissance qu'ils avaient de ce que le Seigneur exauçait leurs vœux, en donnant un Dauphin à la France.

"M. le gouverneur général donna le soir un grand repas aux dames et à toute la noblesse : on y but les santés de Leurs Majestés et celle de Mgr le Dauphin.

"Tous les bourgeois et artisans, justement pénétrés de joie, firent la même chose ; de sorte qu'une partie de la nuit se passa partout dans les plaisirs et les divertissements.

"Le temps de la navigation parvenu, on eut par l'île Royale[2] la confirmation de cette heureuse nouvelle ; et le vaisseau du roi étant arrivé le 31 juillet suivant, M. de l'Etenduère qui le commandait remit à M. le gouverneur général et à M. l'intendant les lettres de Sa Majesté à ce sujet. Alors on se prépara pour la fête que l'on méditait.[3]

"Le 8 septembre, M. le gouverneur général donna ses ordres pour que tous les bourgeois et artisans eussent à ne point tenir boutique ouverte pendant le temps de la réjouissance, et à illuminer leurs maisons.

"Toutes choses étant préparées, cette fête fut annoncée la veille au soir par une décharge de toute l'artillerie de la place ; et les troupes de la marine et de milice furent commandées pour prendre les armes.

"Le lendemain, onze du dit mois, au lever du soleil, les mêmes décharges se firent. Le chapitre de l'église cathédrale s'assembla pour chanter une grand'messe en musique : pendant l'élévation, se fit une décharge de l'artillerie, pareille à celle du matin. M. le gouverneur général, l'intendant, M. de l'Etenduère, capitaine du vaisseau du roi, le conseil supérieur, les officiers de la juridiction, la noblesse et tous les corps y assistèrent en cérémonie.

"Sur les trois heures après-midi, cette même assemblée se rendit au château Saint-Louis, et de là en l'église cathédrale.[4] On fit une procession, à laquelle Mgr le coadjuteur assista : elle fut chez les RR. PP. ré-

[1] Les communautés de Québec, à cette époque, étaient les récollets, les jésuites, le séminaire, les ursulines, l'Hôtel-Dieu, l'hôpital général.

[2] Depuis le traité d'Utrecht (1713), l'Acadie et Terreneuve appartenaient à l'Angleterre. L'île Royale ou Cap-Breton était le seul poste avancé, dans le golfe Saint-Laurent, qui fût resté à la France. Les vaisseaux de la mère patrie, en route pour le Canada, arrêtaient à Louisbourg, et l'on dépêchait aussitôt des canots ou autres embarcations légères à Québec pour ceux qui étaient pressés d'arriver.

[3] On mit tout le mois d'août à se préparer ; et vraiment ce n'était pas trop, lorsqu'on se rend compte de l'organisation de cette fête dans tous ses détails.

[4] La fête commence, le matin, à la cathédrale ; l'après-midi, elle commence au château : et c'est de là que l'on part pour aller à la cathédrale.

collets.[1] Lorsqu'elle passa, le château tira du canon. Sortant de cette église pour aller à celle des pères jésuites,[2] elle eut un pareil salut ; ce qui fut également observé lorsqu'elle rentra.[3]

" Mgr le coadjuteur entonna le *Te Deum*, qui fut chanté en musique, avec le psaume *Exaudiat*, pendant lesquels se fit une décharge de plus de cent boëttes et des canons du château et de la citadelle.[4]

" Après cette cérémonie, M. le gouverneur général, l'intendant, et le lieutenant de roi se rendirent au feu de joie,[5] toutes les troupes et les milices en bataille. Ils allumèrent le feu qui avait été préparé, et crièrent à haute voix : " Vive le roi " ! On y répondit si généralement et d'une manière si naturelle, qu'il était aisé de voir que le cœur avait la première part à ces acclamations. Elles ne finirent que par le bruit des boëttes et de toute l'artillerie de la place et des vaisseaux de la rade.

" Aussitôt toute la ville parut illuminée ; et M. le gouverneur général étant rendu au château, avec M. l'intendant et tous les officiers, il donna le signal pour tirer le feu d'artifice, qu'on avait dressé de l'autre côté de la rivière.[6] Il faisait face au château. Il parut de son centre une flèche, de laquelle partit nombre de fusées de différents goûts, avec un soleil qui monta du bas en haut, et d'autres à tous les coins. Dans les flancs il y avait un *Vive le Roi*, formé par des lumières artificielles, qu'on distinguait d'une demi-lieue.

" A la grande porte du château,[7] était un arc de triomphe, formant trois arcades soutenues par des colonnes ;[8] aux deux les plus proches de l'arcade du milieu, à droite, était représentée la Religion, la Justice à gauche ; sous l'arcade du côté de la Religion, se voyait un Amour, lui présentant une couronne ; et sous celle du côté de la Justice, un autre Amour qui montrait un sceptre à cette divinité : voulant donner à connaître qu'elles-mêmes prendront soin de l'éducation du prince, qu'enfin l'une et l'autre seront toujours couronnées, soutenues et affermies.

" Sous l'arcade du milieu était un autre Amour, présentant au public les vers qui suivent :

La fable peint l'Amour dans sa minorité ;
Chez elle cet enfant ne quitte point cet âge :
Notre amour, cher Dauphin, a seul cet avantage
Qu'il est à votre égard dans sa majorité.

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[1] Par la rue du Fort et la place d'armes.

[2] Par la rue Sainte-Anne, puis la rue des Jardins.

[3] Par la grande place de la cathédrale.

[4] On verra plus loin ce qu'était cette citadelle.

[5] Ce feu de joie dut se faire soit au milieu de la grande cour du fort Saint-Louis, soit sur la place d'armes.

[6] De l'autre côté du fleuve, l'aspect était encore assez sauvage et primitif, si l'on en croit une lettre de l'intendant Dupuy, de 1727 : " Le rivage du sud jusqu'à Saint-François est encore couvert de bois fort épais, et sans chemins praticables.... "

[7] Cette porte était au pavillon du milieu de la façade donnant sur la cour intérieure du fort.

[8] Il est probable que cet arc de triomphe était, comme ceux de nos jours, une charpente revêtue de branches d'arbres.

" La lettre L, par où ils commencent, était enfermée dans un quarré, avec cette devise au-dessus : *Fætu clara suo.* Il paraissait sortir d'une fusée quatre étoiles, les deux premières jointes ensemble, une seule, et la dernière beaucoup plus grosse que les autres.

" Au-dessus régnait un arc-en-ciel, au milieu duquel étaient ces mots : *Utriusque Franciæ spes et amor.* Son centre représentait un cartouche supporté au milieu d'une mer par deux hommes marins, tenant chacun une conque marine, dans laquelle ils soufflaient, et d'où sortait une vapeur épaisse, avec ces mots : *Vivat Delphinus!* On y voyait, dans une autre mer plus reculée, un dauphin et un soleil levant, qui avaient pour devise : *Dominabitur a mari usquè ad mare.* Sur le reste des deux colonnes que cet arc-en-ciel n'occupait point, étaient deux grands globes bien ornés. Ce second édifice supportait par son milieu les armes de France et du Dauphin, accompagnées de consoles enrichies de fleurs de lys d'or, autour desquelles étaient écrit d'un côté *Vive le roi*, et *Vive la reine* de l'autre.

" Sur le point de la couronne des armes paraissait se venir poser une Renommée, couronnée de lauriers, tenant d'une main une palme, et de l'autre sa trompe, d'où paraissaient sortir ces mots : *Sunt munera Divum.* A ses côtés, quatre lustres, représentant chacun une étoile, et pour accompagnement un impérial richement orné, dont l'extrémité se terminait par une autre étoile.

" Cet édifice, garni d'un nombre infini de lampions, joints aux lumières dont toutes les croisées du château étaient remplies, donnait une si grande clarté, qu'on eût cru voir le plus beau jour au milieu de la nuit la plus obscure. Tout le monde en fut si content, que, malgré qu'on eût illuminé trois jours consécutifs, on demanda par des cris de " Vive le roi " qu'on donnât encore cette satisfaction : ce que M. le gouverneur général accorda.

" M. le gouverneur général avait invité toutes les dames et les personnes de distinction à cette fête. Sur les dix heures, on servit un magnifique souper : les appartements du château, quoique grands, ne pouvant contenir l'assemblée, on mit des tables jusque sur la galerie, laquelle est située si avantageusement, qu'on découvre de six à sept lieues à la ronde. La somptuosité et la délicatesse se firent sentir partout : on but les santés de Leurs Majestés et de Mgr le Dauphin au bruit de toute l'artillerie. Cette fête se termina par un bal qui dura toute la nuit.

" Le 18 du même mois, M. l'intendant donna aussi une fête. Le canon l'annonça la veille ; et l'artillerie recommença le lendemain au soleil levant.

" Les pères récollets avaient choisi ce jour pour témoigner à Dieu leur reconnaissance. Ils chantèrent une grand'messe en musique, où M. le gouverneur général, l'intendant et toute la noblesse assistèrent. A l'issue des vêpres, le R. P. F.-X. de LaHaye,[1] religieux de leur ordre,

[1] Son nom ne se trouve ni dans la *Liste chronologique* de M. Noiseux, ni dans le *Répertoire* de Mgr Tanguay.

prononça un discours à l'occasion de la naissance de Mgr le Dauphin, qui fut universellement applaudi. Le *Te Deum* y fut chanté en musique, au bruit de toute l'artillerie.

"M. le gouverneur général étant rendu chez M. l'intendant, avec toutes les dames, les officiers et toutes les personnes de distinction, le signal fut donné pour tirer le feu d'artifice, qui eut une exécution très régulière. Le palais était illuminé. On servit ensuite le souper, tout des plus magnifiques, et où rien n'était épargné : on y but les santés du roi, de la reine et de Mgr le Dauphin, au bruit de l'artillerie ; ce qui fut suivi d'un bal qui dura jusqu'au lendemain matin.

"Le 9 du mois d'octobre, M. de l'Etenduère,[1] capitaine du vaisseau du roi, se distingua aussi par la fête qu'il donna à bord du *Héros*. Elle fut annoncée la veille et le lendemain matin, au bruit de toute l'artillerie de la rade. La grand'messe et le *Te Deum* y furent chantés au bruit de la même artillerie et de celle du château. Il y eut ensuite un grand dîner : les santés de Leurs Majestés et de Mgr Dauphin s'y burent, auxquelles on répondit par plusieurs décharges des canons de la rade[2] et du château.

"Tous les vaisseaux étaient pavoisés ; et sur les sept heures du soir il y eut plusieurs décharges de mousqueterie et de canons. Il y fut tiré nombre de fusées. Le vaisseau du roi et les navires marchands parurent illuminés : ce premier était orné d'une si grande quantité de lumières, qu'on en distinguait parfaitement tout le corps et toutes les manœuvres.[3]

"Le 15 du même mois, les RR. PP. jésuites firent prononcer par le R. P. de la Chasse,[4] de leur compagnie, un discours sur la naissance de Mgr le Dauphin, qui eut un applaudissement général. Mgr le coadjuteur entonna ensuite le *Te Deum*, qui fut chanté en musique, au bruit de nombre de boëttes et de l'artillerie du château Saint-Louis.

"Le soir, il firent tirer nombre de fusées des plus belles, et leur maison parut illuminée, aussi bien que le clocher de leur église." (Joint à la lettre de MM. de Beauharnais et Hocquart, du 15 octobre 1730.)[5]

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[1] Le marquis de l'Etenduère était un marin distingué dont les états de service allaient de pair avec ceux de MM. de Beauharnais, de la Galissonnière, de la Jonquière. (*Voyage* de Kalm, édit. Marchand, p. 183.)

[2] Des batteries Dauphine, Royale et Vaudreuil.

[3] Cela ne rappelle-t-il pas l'illumination des navires dans le port de Québec aux fêtes jubilaires de S. M. la reine Victoria ?

[4] Il était supérieur des jésuites de la Nouvelle-France. Confesseur de Mgr de Saint-Vallier, il assista à l'enterrement du vénéré prélat, puis prononça son oraison funèbre à l'hôpital général et ensuite dans l'église des jésuites. Avant de venir à Québec, vers 1712, il avait été longtemps missionnaire chez les Abénakis. "Le marquis de Vaudreuil, alors gouverneur, s'était opposé à son départ de la mission, le croyant nécessaire à la stabilité de l'alliance des Français avec cette fière et belliqueuse nation." (*Les Ursulines de Québec*, t. II, p. 147.)

[5] Archives de la Marine, Canada, Correspondance générale, vol. LII.

"Tout cela sonne gros," disait en 1663 la mère de l'Incarnation, en voyant que l'on donnait déjà à Québec, qui renfermait à peine soixante-dix maisons,[1] "le nom de ville", et au Canada, qui comptait environ 3,000 âmes, celui de "province ou royaume".[2] Ce mot me revient à l'esprit, lorsque je compare la solennité de ce récit officiel avec le Québec de 1730, lorsque je cherche à mettre dans son vrai cadre le tableau de cette fête patriotique dont on vient de lire le compte-rendu.

Il est vrai que la "ville capitale de la Nouvelle-France" avait un peu augmenté : elle comptait en 1730 au moins 7,000 âmes, et cinq cents maisons environ.[3] Mais quelle pitié que l'apparence extérieure de la plupart de ces maisons et surtout de leurs alentours ! Le gouverneur et l'intendant écrivent au ministre en 1726 :

"C'est la chose la plus disgracieuse à voir que la ville de Québec, dont les murs des maisons ne sont que de pieux de bois de neuf à dix pieds de hauteur, la plupart renversés et couchés sur le travers des rues, et qui font que cette ville n'est qu'un chantier de bois, les particuliers qui en font de grosses provisions mettant encore leur bois à brûler le long de ces murs..... Si le feu, qui est ici plus fréquent qu'ailleurs, courait seulement une rue entière, il ne serait pas possible de sauver la ville, à cause de ces murailles de pieux."

La beauté naturelle du site de Québec avait frappé le comte de Frontenac :

"Rien ne m'a paru si beau et si magnifique, écrivait-il en 1672, que la situation de la ville de Québec, qui ne pourrait pas être mieux postée quand elle devrait devenir un jour la capitale d'un grand empire."

Mais on n'avait pas, à cette époque, pour la formation d'une ville, les idées d'ordre et de régularité que l'on prône aujourd'hui :

"On a fait jusques ici, ajoutait Frontenac, une très grande faute, en laissant bâtir les maisons à la fantaisie des particuliers, et sans aucun ordre..... Si l'on veut que la ville s'augmente et s'embellisse, il faut que l'on prenne plus de soin des alignements des maisons qu'on y construira, et que chacun a faites jusques ici selon son caprice et sa fantaisie."

Pendant longtemps le gros de la population se porta à la basse ville, surtout dans les rues Saut-au-Matelot, Notre-Dame et Sous-le-Fort. C'est là qu'étaient les principales résidences, celles des hommes d'affaires, des citoyens marquants. Au recensement de 1716, on ne voyait guère dans la rue Saint-Louis que deux personnages de la haute société, le docteur Sarrazin et M. de Lotbinière : tous les autres étaient des artisans ou des journaliers.

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[1] *Histoire de l'Hôtel-Dieu*, par la sœur Juchereau, p. 172.

[2] *Lettres de Marie de l'Incarnation*, t. II, p. 267.

[3] Il y avait, en 1716, quatre cent cinquante-huit familles ou feux. (*Recensement de 1716*, publié par l'abbé Louis Beaudet.)

Les communautés religieuses, qui possédaient une grande partie du terrain de la haute ville,[1] se décidèrent assez tard à concéder des emplacements à bâtir. Frontenac leur supposait même à ce sujet des intentions qui, je crois, étaient étrangères à leurs calculs :

" Elles ne se soucient guères, disait-il, et même elles seraient peut-être fâchées que la ville augmentât davantage."

D'après MM. de Beauharnais et Hocquart, "il n'y avait encore, en 1720, dans le quartier du rempart, que deux ou trois maisons, et autant dans le quartier du palais". Mais ils ajoutaient : " La ville s'est bien agrandie depuis ce temps".

En effet, il y avait, en 1730, " plus de quarante maisons" sur le seul terrain du séminaire. L'intendant Dupuy écrivait en 1727 : " On a proposé aux communautés de céder des emplacements pour y bâtir des maisons. La plupart en ont accepté le parti. Les jésuites le font. J'y ai fait consentir le séminaire de Québec, qui, par la vente de ses terrains, va tirer de quoi payer une partie de ses dettes."

L'Hôtel-Dieu avait aussi concédé bon nombre d'emplacements : mais voici ce que l'ingénieur Chaussegros de Léry écrivait au ministre à propos des résidences qui s'y construisaient :

" Les ingénieurs sont obligés d'informer la cour de ce qui peut empêcher l'établissement des villes et d'y bâtir de belles maisons. Il arrive dans ce pays que les communautés possèdent des terrains, séparés de l'enceinte qu'elles occupent par leurs monastères, jardins, cours et autres lieux qui leur sont nécessaires, où il se trouve une rue publique entre deux. Ils vendent le terrain entre celui qu'ils occupent et la dite rue, à condition que l'acheteur n'y bâtira que l'étage au rez-de-chaussée, afin de n'être pas vus dans leurs monastères et jardins ; et si l'acheteur fait sa maison à plusieurs étages, ils veulent que l'étage au-dessus du rez-de-chaussée n'ait aucune fenêtre ou ouverture sur la rue : ce qui fait qu'on n'ose acheter de pareils terrains, et ceux qui en ont acheté sont privés de pouvoir faire leurs maisons à plusieurs étages, ce qui nuit à l'établissement et à la décoration des villes. Je n'ai pas vu dans Paris, ni dans les autres villes du Royaume où j'ai été, que les maisons des particuliers ne puissent pas avoir d'ouvertures sur les rues publiques. Cette clause me paraît extraordinaire ; et comme elle nuit à l'établissement et à la décoration des villes, je crois qu'elle ne devrait pas avoir lieu, les communautés n'ayant qu'à élever leurs murs de clôture, s'ils ne veulent pas être vus, comme il se pratique dans toutes les villes de France, n'étant pas naturel que les particuliers ne

[1] " Vous verrez par un plan de la ville de Québec que je prends la liberté de vous envoyer, que presque tout son terrain est occupé par les communautés ; j'en ai distingué les terrains par des couleurs différentes, et vous trouverez que, quand on en sépare les emplacements de l'Hôtel-Dieu, du séminaire, de l'évêché, des jésuites, des ursulines, des récollets, de la place de la paroisse, de celle du château et de la citadelle, le terrain à bâtir à Québec se réduit presqu'à rien." (Lettre de Dupuy au ministre, 1727.)

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puissent pas faire plusieurs étages à leurs maisons, et n'avoir pas d'ouvertures sur les rues publiques....."

L'enceinte de la haute ville était, d'ailleurs, beaucoup plus restreinte qu'elle n'est aujourd'hui, les fortifications passant, à cette époque, à peu près sur la rue Sainte-Ursule, et allant rejoindre la redoute du cap au Diamant, à l'extrémité est de ce cap.

Cette redoute, c'était la "citadelle" dont parle la Relation, car la citadelle actuelle ne date que du commencement de ce siècle. Elle était reliée par une courtine au cavalier de Dumont, ainsi appelé à cause du moulin Dumont, où il y avait une batterie. Çà et là s'avançaient quelques bastions ; dans l'un d'eux s'élevait une autre redoute, appelée la redoute Royale. Il y avait deux autres redoutes, l'une en dehors des fortifications, la redoute Dauphine, et l'autre au palais.

Tout autour du promontoire de Québec se dressaient des batteries : il y en avait une de vingt-deux embrasures au château ;[1] la moitié était en dedans du fort, l'autre moitié en dehors. Deux autres batteries se trouvaient sur les remparts, en arrière de l'Hôtel-Dieu : on les appelait batteries de l'Hôpital ; deux autres, sur le chemin des Rondes, près du séminaire et de l'évêché : on les appelait batteries du Clergé : celle de l'évêché avait vingt-et-une pièces de canon et un mortier.[2] Enfin, trois autres batteries, situées à la basse ville, sur le bord de la rivière, la batterie Dauphine, la batterie Royale[3] et la batterie Vaudreuil, complétaient le nombre de ces "forteresses" dont parle la Relation.[4]

Les fortifications de Québec, telles qu'elles étaient en 1730, étaient l'œuvre de nos gouverneurs Frontenac, Callières, Vaudreuil. Celui-ci, surtout, y avait fait travailler sans relâche, dans le temps qu'il s'était vu menacé d'une invasion anglaise en 1711. Il avait été bien secondé par la générosité des Canadiens. Ecrivant au ministre l'année suivante :

"J'ai tout lieu d'être content, disait-il, de la diligence du sieur de Beaucour, aussi bien que de la bonne volonté des peuples, qui viennent aux corvées sans faire la moindre difficulté..... Les marchands de cette ville, sur la représentation que je leur ai faite que nous manquions de fonds, tous ensemble, de la meilleure grâce du monde, nous ont fait prêt de 150 mille livres du pays, et l'auraient fait plus considérable si nous l'avions voulu."

Tous ces ouvrages militaires formaient un ensemble assez imposant : et cependant ils étaient jugés par les hommes compétents comme absolument insuffisants. M. de Louvigny, lieutenant de roi, écrivant au ministre en 1724 :

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[1] La Potherie, cité par M. Ernest Gagnon dans *le Fort et le Château Saint-Louis*, p. 86.

[2] Lettre de Beauharnais et Hocquart au ministre, 15 octobre 1732.

[3] La maison des sœurs de la Congrégation était entre ces deux batteries.

[4] Voir le plan de Québec de M. de Léry, 1720.

" Dans peu d'années, disait-il, la colonie sera en état de se soutenir contre les ennemis du roi, si Sa Majesté a pour agréable de faire une faible dépense pour fortifier la ville de Québec, dix mille écus chaque année pendant cinq ans. Les peuples du Canada ont de la valeur, ils aiment leur roi."

M. de Louvigny désirait sans doute voir exécuter le magnifique plan de citadelle et de fortifications qu'avait préparé quelques années auparavant Chaussegros de Léry. Celui-ci écrivait à ce sujet au ministre :

" J'ai l'honneur d'envoyer au conseil (d'Etat) le plan en relief de la ville de Québec, qui est entièrement fini. Toutes les fortifications approuvées du Conseil dans la haute ville y sont en relief. J'ai mis une enceinte dans la basse ville, qui serait construite sur une batture de roches. J'ai observé toutes les pentes et hauteurs de la montagne....."

Malheureusement, le plan de fortifications de cet ingénieur ne fut pas exécuté. On ne voyait en 1730 que celles de Vaudreuil et de Beaucour.

Celles-ci passaient, comme je l'ai dit, par la rue Sainte-Ursule, sur le terrain des ursulines, laissant comme issue au public les portes Saint-Jean et Saint-Louis.[1] On aura une idée des dégâts qu'on avait faits en construisant ces fortifications, avec leurs bastions et leurs terrasses, par l'extrait suivant d'une lettre des ursulines à la cour :

" Les religieuses ursulines de Québec représentent qu'on leur a fait deux torts considérables. Le premier est une terrasse que le sieur de Beaucour, ingénieur, a fait élever malgré elles si proche de leur maison, qu'il semble qu'il n'ait eu en cela d'autre dessein que de les chagriner. En effet, cette terrasse, qu'il aurait pu facilement reculer, est un chemin passant, qui domine tout leur monastère, où elles ne peuvent plus se cacher, et où elles essuient toutes sortes de railleries et même d'insultes du public.

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[1] Montréal avait seize portes, huit grandes et huit petites.

Voici deux extraits intéressants, qui nous montrent Montréal en 1717, et Montréal en 1738 :

" La ville de Montréal est d'une grande étendue : elle a trois quarts de lieue de tour, son enceinte ou fortification ayant 1819 toises courantes de pourtour. Elle n'est formée que d'une mauvaise enceinte de pieux, dont une bonne partie sont pourris. Les habitants y ont fait plusieurs ouvertures, et il n'y a aucune porte en état de fermer, et ne ferment point pendant toute l'année ; et comme dans ce pays on est toujours à la veille d'avoir la guerre avec les Anglais et les Sauvages, et qu'on ne peut savoir la déclaration de la guerre d'Europe qu'après les Anglais, ils pourraient enlever cette ville très aisément, dans l'état où elle est présentement...." (Mémoire de Chaussegros, 10 août 1717.)

" L'enceinte de la ville de Montréal est entièrement finie. Il n'y a que les glacis qui ne sont pas encore en leur perfection dans plusieurs endroits.

" Il y a huit grandes portes, et huit petites, savoir cinq grandes du côté du fleuve, et cinq petites. Cette quantité paraît nécessaire en cas de feu, et pour l'entrée des effets qui viennent en quantité de ce côté-là.

" Il y a une grande porte à chaque bout de la ville, et une du côté de la campagne

" Les petites portes sont situées, cinq du côté de l'eau, une au bout du sud-ouest de la ville, et deux du côté de la campagne...." (Lettre de M. de Beaucour, commandant à Montréal, au ministre, 13 octobre 1738.)

"Le second est que pour construire cette terrasse, qui leur est si préjudiciable, le dit sieur de Beaucour, qui disait par raillerie que de là il verrait toutes les religieuses, a pelé et enlevé jusqu'au roc toutes les terres circonvoisines, appartenantes aux ursulines, en sorte qu'elles ne peuvent plus même marcher dans les lieux qui en partie faisaient leur enclos, qu'on leur a inhumainement retranché, où elles avaient auparavant jardins, vergers, pâturages et basse-cour, d'où elles tiraient une partie de leur subsistance, et qui présentement sont semblables, par l'épuisement de ces terres, aux endroits bouleversés par la mine, renversés par un tremblement de terre et foudroyés par le feu du ciel ....."

A ces dégâts, à ces bouleversements causés par les travaux des fortifications, et qui n'avaient été réparés qu'en partie, en 1730, ajoutons ceux dont parle l'intendant Dupuy dans une ordonnance datée de 1727 :

"Il n'y a presque pas de rues, dit-il, et de places publiques dans Québec, où les eaux du Cap-aux-diamans n'aient découvert par leurs ravins des roches si dûres et si aiguës, qu'il n'est presque plus possible d'y faire passer les chevaux. La place même de la cathédrale—laquelle est grande, spacieuse, bien disposée pour y tenir un marché public, pour y pratiquer une fontaine au besoin, qui serve de réservoir aux eaux de la haute ville, et y faire une promenade propre au délassement du public—n'est encore pour le présent qu'un cahos et un amas confus de pierres et de rochers....." [1]

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Tout était encore bien primitif dans le Québec de 1730. Des pieux plantés en terre et appointis par le bout, voilà ce que l'on voyait généralement autour des emplacements et des maisons pour les enclore. Il n'y avait pas autre chose même entre les terrains de l'Hôtel-Dieu, du séminaire, de l'évêché, et le chemin des Rondes. Les hospitalières firent construire un mur de pierre deux ou trois ans plus tard : le gouverneur, l'intendant et l'évêque décidèrent qu'il serait placé à 40 pieds "du bord de l'escarpement".[2] Au séminaire, on se contenta, "pour fermer le jardin", de renouveler la clôture de pieux et de la faire un peu plus haute. Il le fallait bien : les vieux pieux étaient trop bas : "On sautait pardessus pour aller y voler[3]."

Mgr Dosquet se plaignait de n'être pas suffisamment protégé par sa clôture de pieux contre les regards des passants :

"Je ne puis, disait-il, me tourner du côté de la terrasse, sans être obligé de rendre le salut aux passants, ou de répondre aux compliments

[1] *Edits et Ordonnances*, t. II, p. 314.

[2] "Les dames de l'Hôtel-Dieu ont fait faire les murs de leur clôture sur le rempart à quarante pieds de la côte, en conformité de vos ordres." (Lettre de Lanouiller de Boisclair, grand voyer, au ministre, 31 octobre 1735.)

[3] Lettre de Mgr Dosquet au ministre, Paris, 20 mars 1733

de ceux que je connais. C'est sous mes fenêtres que s'assemble le bas peuple des deux sexes après leur souper, où ils chantent et tiennent des discours libres, que j'entends comme s'ils étaient chez moi. Je ne parle pas de leurs actions indécentes. C'est là que les personnes ivres viennent cuver leur vin, et des personnes malignes les ont plusieurs fois découvertes avec la dernière indécence..... Les fêtes et dimanches, on y a la tête rompue du bruit qu'y font ceux qui jouent aux quilles et à la boule..... Si je vais dans mon jardin, tout le monde s'arrête aux pieux pour me regarder...."[1]

Il entreprit de fermer ce chemin au public, et proposa à l'intendant "de faire faire une porte au bout de la terrasse qui joint le terrain du palais épiscopal en descendant à la basse ville, du côté du rempart". L'intendant ne s'en souciait guère : il fit cependant poser la porte, par complaisance pour le prélat, et celui-ci entreprit "de veiller à ce qu'elle restât fermée". Le public commença à se plaindre, et bientôt "le murmure devint général". L'évêque s'étant un jour absenté, probablement pour sa visite pastorale, "quelques étourdis forcèrent le guichet et l'ouvrirent pendant la nuit. Il fut refermé par les soins du concierge. La nuit suivante, il fut forcé de nouveau et emporté". Suivant l'expression de l'évêque, "pendant qu'on fermait la porte d'un côté, un homme la brisait de l'autre".[2]

Il y eut au sujet de cette porte et de cette terrasse une longue correspondance entre le prélat et la cour : elle couvre au moins quarante pages des archives ; et le résultat fut que la porte resta ouverte.

Un peu plus bas que cette porte, se trouvait "l'escalier de la basse ville". Le haut de cet escalier était fermé par une barrière "pour empêcher les bestiaux" de passer.[3] Il n'était pas rare, en effet, à cette époque, de voir des animaux errants, des cochons, surtout, dans les rues de Québec.

A la basse ville, les rues n'étaient souvent qu'un bourbier. "Elles sont impraticables quand il pleut et à la fonte des neiges du printemps, écrit le grand voyer, par les boues et vidanges qui y séjournent..... J'ai déjà sondé les esprits d'une grande partie des bourgeois sur la nécessité qu'il y a de paver la basse ville..... Il y en a deux qui ont commencé à paver au devant de leur emplacement..... Le grès pour paver se trouve à la côte de l'Ange-Gardien, à trois lieues de Québec, où les barques vont le prendre de la côte sans beaucoup de frais."[4]

Il n'y avait pas de quai : les résidents songèrent à en construire un à leurs frais. Le gouverneur et l'intendant écrivent à la cour à ce sujet :

"Nous examinerons sur les titres des concessions accordées à ceux qui se sont bâtis sur la grève, au bas de la ville, s'ils ne se sont point assujétis à la construction, ou du moins à l'entretien d'un quai. Le dessein

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[1] Lettre de Mgr Dosquet au ministre, Québec, 4 septembre 1731.

[2] *Ibid.*

[3] *Jugements et Délibérations du Conseil supérieur.*

[4] Lettre de Lanouiller de Boisclair, grand voyer, au ministre, 31 octobre 1735.

de contribuer entre eux à la consruction de ce quai est toujours le même de la part de plusieurs ; il serait à propos de profiter de cette bonne volonté, qui procurera à la ville une sûreté et une décoration."

Les " moulins à bateau "[1] du sieur Lanouiller de Boisclair faisaient, depuis 1722, un service plus ou moins régulier entre Lévis et Québec ; on traversait aussi en canot, et l'on venait atterrir à l'anse du Cul-de-Sac.

Lorsque les habitants, venant en ville pour le marché, arrivaient la nuit, ils faisaient un bon feu sur la grève pour se réchauffer, et attendaient là jusqu'au matin. C'était un usage tout-à-fait patriarcal. Mais il y avait un danger, celui de mettre le feu aux maisons de la basse ville, " toutes couvertes de bardeaux." Le conseil supérieur jugea à propos de défendre cette pratique.[2]

Du reste, M. Prat, capitaine du port de Québec, " avait fait mettre le Cul-de-Sac en état de recevoir les vaisseaux ". Il écrivait à la cour dès l'année 1712 : "Presque tous ceux qui sont venus de France et de la Martinique s'y sont fait radouber et caréner cette année."

Il avait aussi établi un chantier pour la construction des navires, " au bas du Cap-aux-diamans ", à l'anse des Mères : " Je serai obligé, disait-il, de faire miner quelques rochers qui se trouvent dans la devanture de cet endroit, où ensuite on pourra construire toutes sortes de bâtiments." Il s'y construisit cette année-là (1712) un vaisseau de guerre.

De l'autre côté du promontoire de Québec, " à quatre ou cinq arpents du palais, sur la rivière Saint-Charles, au delà de l'ermitage Saint-Roch ", était un autre chantier de vaisseaux, au sujet duquel l'intendant Hocquart écrivait en 1731 :

" Le terrain y est solide. Il s'y trouvera dix-huit ou vingt pieds d'eau dans les grandes mers ordinaires, ce qui est un fond suffisant pour y construire les plus gros vaisseaux. Il y a de plus dans le même voisinage quelques maisons nouvellement bâties, qui pourront servir de magasins pour y retirer diverses munitions et ustensiles pendant le cours de la construction....."

Ces " quelques maisons nouvellement bâties ", voilà bien les commencements de l'immense faubourg Saint-Roch d'aujourd'hui.[3]

L'ermitage Saint-Roch[4] dont il est ici question était une petite chapelle, avec un hospice y attenant, que les récollets avaient fait construire vers 1703, à la suite de la terrible épidémie de picote qui décima la ville

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[1] Lettre de Vaudreuil et Begon au ministre, 17 octobre 1722.

[2] *Jugements du Conseil supérieur*, 1707.

[3] La rue Saint-Roch fut ainsi appelée de l'ermitage Saint-Roch. Elle date de 1732. Le terrain de cette rue fut concédé par Marie-Geneviève Amiot de Vincelotte, veuve de Jacques Richard. (*Jugements du Conseil supérieur*, 24 nov. 1732.)

[4] Sur cet ermitage, voir *Henri de Bernières*, page 87, note.

dans l'hiver de 1702.[1] Ils mirent cet ermitage sous le vocable du saint que l'on invoque dans les temps de fléaux publics.[2]

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Toute la population de Québec ne formait encore en 1730 qu'une seule paroisse ; et il n'y avait qu'une seule église paroissiale, la cathédrale. La grand'messe du chapitre, le dimanche, était aussi la messe de paroisse ; l'office se terminait, au témoignage de M. de Champigny, entre 10 heures et 10 heures et demie ; puis il y avait à l'église de la basse ville une messe " pour les personnes infirmes et incommodées, qui ne sauraient monter à la haute ville, principalement l'hiver ".

Je lis dans un mémoire écrit vers 1738 : " Il n'y a point à Québec d'église cathédrale. L'on se sert de la paroisse, qui est trop petite et qui menace ruine."

Elle était en effet si petite pour la population, que le gouverneur et l'intendant proposèrent à l'évêque, en 1734, " d'établir une seconde paroisse dans la ville ".

" J'y trouvai plusieurs difficultés, écrit le prélat ; et je les fis convenir que le temps n'était pas venu pour ce nouvel établissement..... Mon sentiment serait qu'on profitât de la disposition où sont les chanoines, pour mettre l'église de Québec sur le pied de toutes les églises de France, où il y a chapitre et paroisse, c'est-à-dire qu'on célébrât deux messes, une pour le chapitre, et une pour la paroisse, et que les sacristies fussent séparées... Ce n'est que par nécessité et faute de sujets, ajoutait le prélat, qu'on a permis par le passé qu'un seul office servirait pour le chapitre et pour la paroisse."

Depuis plusieurs années, paraît il, les chanoines songeaient à la construction d'une cathédrale à part. M. de Léry écrivait à la cour en 1725 :

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[1] Sur cette épidémie, voir *les Ursulines de Québec*, t. II, p. 15.

[2] Trente ans plus tard, une nouvelle épidémie de picote sévit au Canada. Voici ce qu'écrivaient à la cour MM. de Beauharnais et Hocquart le 14 oct. 1733 :

" La petite vérole, qui a affligé ce pays depuis la fin de l'automne 1732 jusqu'aujourd'hui, et qui a enlevé près de 2,000 personnes à la colonie, avait épuisé les ressources des particuliers. La suspension de tous travaux s'est nécessairement ensuivie de la disette, les ouvriers et journaliers de Québec devenaient de jour en jour à charge aux gens aisés, et encore plus à nous qu'à tout autre, par des importunités trop fréquentes.

" Nous n'avons trouvé d'autre expédient pour les tirer de la misère, que de leur procurer du travail. Nous en avons fait passer une partie à Montréal, qui ont été employés utilement aux travaux des fortifications, et nous avons gardé ici ceux qui étaient les plus chargés de famille. Nous les avons employés à former le commencement d'une digue de pierres sèches dans la rivière Saint-Charles, près du palais, ouvrage également utile et avantageux au commerce, et qui procurera aux bâtiments de mer la sûreté et l'abri qu'ils ne trouvent pas à beaucoup près dans l'endroit dit le Cul-de-Sac, à la basse ville, ce dernier endroit étant le seul où les bâtiments pussent hiverner et caréner. Ils y sont exposés aux accidents du feu, lors des carènes, à cause de la petitesse du lieu.... La nouvelle digue remédiera pleinement aux inconvénients, et les bâtiments trouveront, dans le nouveau port qu'elle forme, un hivernement commode...."

"Les messieurs du chapitre de Québec m'ont assuré qu'ils travaillaient en France pour obtenir de Sa Majesté une loterie, comme on a fait pour la paroisse de Saint-Sulpice à Paris, pour que le revenant bon fût employé à la construction d'une cathédrale à Québec. Ils m'ont demandé un dessin pour cet édifice. J'ai fait un plan avec toutes les élévations et profils, et j'y ai joint un mémoire. J'ai l'honneur de vous les envoyer...."[1]

C'est sur ce plan de M. de Léry que fut reconstruite en 1745[2] l'ancienne cathédrale ou église paroissiale, consacrée en 1666 par Mgr de Laval, qui existait encore en 1730, et dont Charlevoix faisait la description suivante :

"La cathédrale (de Québec) ne ferait pas une belle paroisse dans un des plus petits bourgs de France : jugez si elle mérite d'être le siège du seul évêché qui soit dans tout l'empire français de l'Amérique, beaucoup plus étendu que n'a jamais été celui des Romains. Son architecture, son chœur, son grand autel,[3] ses chapelles sentent tout à fait l'édifice de campagne. Ce qu'elle a de plus favorable est une tour fort haute, solidement bâtie, et qui de loin a quelque apparence."[4]

Telle était l'église où se chanta le premier *Te Deum*, à Québec, pour

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[1] Lettre de Chaussegros de Léry au ministre, 29 octobre 1725.

[2] "Le 23 décembre 1744, il fut décidé dans une assemblée, de rebâtir l'église paroissiale sur le même emplacement, d'après les plans de M. Chaussegros de Léry, ingénieur en chef. La maçonnerie fut confiée à Charles Vallée, François Moreau et Joseph Routier, la charpente à M. de Lorme, maître charpentier. Ici nous touchons aux constructions modernes. Les fondations des lourds piliers de la nef sont de l'église primitive de 1647. Les tours sont de 1684, mais tout le reste date de 1745. Alors en effet l'église fut allongée de 40 pieds et élargie de deux bas-côtés, de 28 pieds chacun.

"Les longs pans étaient en pierre brute recouverte d'un enduit. Un simulacre de pierre de taille régnait autour des croisées aux arcades surbaissées, et des portes à plein cintre. La façade présentait alors, outre les trois portes, deux fenêtres cintrées l'une sur l'autre au-dessus des portes latérales, et une autre entre deux ouvertures circulaires au-dessus de la porte principale. Les travaux furent terminés le 15 novembre 1748. Il y avait juste cent ans que la première église en pierre avait été bâtie. La sacristie était sur la rue Buade.

"Pendant le siège de Québec en 1759, toute la partie en bois fut incendiée, à l'exception de la base du clocher, et les murs furent endommagés par les boulets et les obus. On se réfugia d'abord dans la chapelle des ursulines ; et lorsqu'en 1764 fut rétablie la chapelle du séminaire, qui avait également beaucoup souffert, mais qui n'avait pas été détruite, on y fit les offices paroissiaux. En 1767, on résolut de réparer l'église sur les mêmes plans que précédemment. Les travaux commencèrent en 1767. M. Laflèche fut chargé de la charpente, et M. Charles Vallée, de la menuiserie. On l'allongea de 22 pieds du côté du sanctuaire, en sorte que sa longueur fut de 216 pieds, et la largeur de 94, les murs compris. Elle fut logeable en 1771. Depuis ce temps, les seuls changements qu'il y ait eu à l'extérieur sont dans la façade. Le gouverneur Carleton fit don, en 1775, d'une horloge à trois timbres pour orner le clocher que l'on avait réparé en 1772." (*Québec, ses Monuments anciens et modernes*, ouvrage inédit de l'abbé Louis Beaudet.)

[3] Voir dans *Henri de Bernières*, p. 77, des détails intéressants sur cet autel, et sur l'ancienne cathédrale "en forme de croix latine" de Mgr de Laval.

[4] *Ibid.*, p. 83.

la naissance du Dauphin. Celles des récollets et des jésuites, de construction beaucoup plus récente, valaient aussi beaucoup mieux.[1]

L'église des récollets, au témoignage de Charlevoix, était " digne de Versailles ". Elle était ornée de vitraux coloriés, et de beaux tableaux dus au pinceau du célèbre frère Luc. La flèche de son clocher, que respectèrent les obus en 1759, était d'une pureté de ligne admirable.

Cette église et le monastère qui y était contigu s'élevaient au haut de ce qu'on appelle encore aujourd'hui la place d'armes, en gagnant la rue Saint-Louis. D'après les plans que nous avons, il n'y avait qu'un petit coin du couvent qui entrât dans l'emplacement qu'occupe aujourd'hui la cathédrale anglicane. En partant de la rue du Trésor, et montant tout droit vers la rue Saint-Louis, on passe nécessairement sur l'emplacement occupé autrefois par le couvent et l'église des récollets, dont il ne reste plus que le souvenir. Ces édifices étaient donc en face du château : la façade de l'église, le perron à plusieurs marches qui conduisait à la porte d'entrée était presque en droite ligne avec la porte du fort et celle de la résidence du gouverneur, dont les récollets étaient les aumôniers naturels. Le gouverneur n'avait qu'un pas à faire pour aller chez les récollets ; et s'il voulait avoir la messe au château, dans sa chapelle privée, il n'avait qu'à leur en exprimer le désir.[2]

Lorsque Frontenac demandait au ministre, en 1690, de nommer " un aumônier pour la garnison du château de Québec ", ajoutant " qu'il était plus nécessaire que celui qu'on avait établi au conseil ", c'est-à-dire, au palais de l'intendant, il voulait sans doute obtenir un traitement pour ces religieux, car ils remplissaient déjà d'eux-mêmes, et de grand cœur, les fonctions d'aumônier.

L'église des jésuites était attenante à l'angle nord-est du collège, et avait le portail au nord, les longs pans d'un côté donnaient sur la rue des Jardins, ceux de l'autre côté sur le jardin des pères. Elle était, comme la cathédrale d'alors, en forme de croix latine, surmontée d'un clocher sur le transept, avec une tourelle carrée à gauche du portail.

Voici ce que Charlevoix écrivait de cette église : " Elle n'a rien de beau en dehors, qu'un assez beau clocher. Elle est toute couverte d'ardoises, et c'est la seule du Canada qui ait cet avantage, car tout est ici couvert en bardeaux. En dedans, elle est fort ornée. Une tribune hardie, légère, bien pratiquée, et bordée d'une balustrade en fer, peint, doré, et d'un bon ouvrage. Une chaire de prédicateur toute dorée et bien travaillée en fer et en bois ; trois autels bien pris ; quelques bons tableaux ; point de voûte, mais un lambris plat assez orné ; point de pavé, mais un bon plancher, qui rend cette église supportable en hiver, tandis qu'on est transi de froid dans les autres. Les colonnes du grand autel sont creuses et grossièrement marbrées."

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[1] *Le Fort et le Château Saint-Louis*, p. 267.
[2] Kalm, *Voyage en Amérique.*

Non loin de l'église des jésuites s'élevait le pieux sanctuaire des ursulines, qui existe encore aujourd'hui. Il avait été bénit par Mgr de Saint-Vallier le 15 août 1722. On avait mis vingt-cinq ans à le bâtir, tant les ressources faisaient défaut à cette époque ; et les principaux personnages de la colonie avaient aidé à sa construction par leurs dons généreux.[1]

L'ensemble des édifices appartenant aux communautés religieuses faisait honneur à la ville. Voici ce qu'écrivait, par exemple, le Suédois Kalm au sujet du couvent des jésuites :

"La maison est magnifique et a une apparence superbe, tant du dehors qu'à l'intérieur : on dirait un vrai palais. C'est un édifice en pierre, à trois étages—outre le grenier,—à toit carré très élevé et couvert en ardoise ; il ressemble au nouveau palais de Stockholm, et renferme entre ses murs une cour spacieuse. Ses dimensions sont telles que trois cents familles pourraient y loger à l'aise, et cependant, dans le moment, il n'abrite pas plus de vingt jésuites.

"Mais quelquefois leur maison en contient un bien plus grand nombre, surtout au retour de ceux qui ont été envoyés comme missionnaires dans le pays. A chaque étage, il y a un long corridor, sur lequel donnent des chambres, des salles ou d'autres pièces pour les pères .....

"Tout y est bien ordonné, et les jésuites sont des mieux partagés ici. Le collège forme une maison à part ; de grands vergers et des jardins potagers coupés de belles allées l'entourent de tous côtés. Outre les arbres de culture, il y a là de nombreux vétérans que la hache du bûcheron a respectés, seuls restes des forêts primitives qui ont vu les commencements de la ville. On y a planté aussi beaucoup d'arbres fruitiers, et le jardin est rempli de toutes sortes d'herbes et de végétaux... .."[2]

Quant aux constructions du séminaire, on sait ce que Frontenac, avec sa pointe de malice ordinaire, en écrivait en 1679 : le séminaire avait été depuis lors détruit par deux incendies successifs ; mais il s'était relevé de ses cendres à peu près sur les mêmes lignes :

"M. l'évêque (de Laval), disait-il, empêche lui-même qu'on en puisse douter (de son revenu) par les grands et superbes bâtiments qu'il fait faire à Québec..... Le palais qu'il fait construire, au dire du frère Luc, récollet, qui en a donné le dessin, coûtera plus de 400,000 livres..... Le bâtiment est fort vaste et à quatre étages ; les murailles ont sept pieds d'épaisseur ; les caves et les offices sont voûtés ; les fenêtres d'en bas sont faites en embrasures, et la couverture est d'ardoise toute apportée de France.

"Mais ce qu'il y a de plus fâcheux, c'est que ce palais est situé au milieu d'un jardin, qui a été dressé à force de mines et aplani par le moyen de terres apportées d'en bas au haut du rocher sur lequel il est, et qui

[1] *Les Ursulines de Québec*, t. II, p. 109.
[2] Kalm, *Voyage en Amérique*.

occupe le seul endroit où l'on peut faire un fort pour la défense de la rade de Québec et des vaisseaux, que l'on ne saurait défendre par aucune batterie si on ne la fait dans ce jardin....." [1]

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Jetons maintenant un coup d'œil sur les résidences des trois personnages les plus en vue dans cette fête patriotique de 1730 : le gouverneur, l'évêque et l'intendant.

Le château Saint-Louis, résidence du gouverneur, s'élevait sur le bord de la côte, juste au-dessus de la basse ville, appuyé sur de très fortes assises. Tel qu'il était en 1730, il avait été bâti par Frontenac dans les dernières années de sa deuxième administration.

C'était un grand bâtiment en pierre, à deux étages, modeste et simple dans son architecture, mesurant environ 120 pieds de longueur sur 35 de profondeur, avec trois pavillons ou avant-corps sur la façade principale,[2] et deux autres du côté du fleuve. Entre ceux-ci régnait une magnifique terrasse de 80 pieds de longueur sur 12 pieds de profondeur, presque surplombant au-dessus de l'abîme, avec une belle balustrade en fer, et pavée de dalles. "On y a une vue splendide de la cité et du fleuve, écrivait Kalm. C'est le promenoir par excellence de l'après-dîner, et aussi de ceux qui ont affaire au gouverneur général, en attendant qu'il puisse les recevoir."

C'est de cette terrasse, alors réservée naturellement au gouverneur, que, dans la soirée du 11 septembre 1730, les hôtes du château Saint-Louis contemplèrent le feu d'artifice qui se déploya avec magnificence sur la falaise de Lévis ; [3] là aussi, comme nous l'avons vu, se prit le dîner en l'honneur du Dauphin.

Aujourd'hui cette terrasse, agrandie, et dégagée de toutes les constructions qui l'enserraient, est devenue la propriété du public. Le peuple, qui n'avait que la terrasse de l'évêché pour prendre ses ébats, et qui, pour en jouir, avait même été obligé de forcer la consigne, est monté d'un échelon, et se promène maintenant sur cette longue et incomparable

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[1] *Henri de Bernières*, p. 70.

[2] L'un de ces pavillons, celui de l'ouest, était de date plus récente que le reste du château. Il avait été bâti par l'intendant Raudot, sous M. de Vaudreuil. Mme de Vaudreuil écrivant au ministre, après son retour au Canada en 1724, lui parlait de la maison que son mari avait fait construire à Montréal pour le gouverneur ; puis elle ajoutait :

"Je vous assure qu'on la trouvera plus solidement bâtie que n'est le pavillon du château qui vient d'être fait, où tout le bois qu'on y a employé est pourri, et les planchers de mauvais sapins, que M. Raudot sait bien ne pouvoir durer ici en hiver, par rapport aux grappins que les hommes portent sous leurs souliers : la ferrure en est infâme, et plus grossière que n'est celle des maisons des paysans en France. . . ."

[3] Probablement à l'endroit où s'élèvent aujourd'hui l'église Notre-Dame, et la statue de Mgr Déziel, qu'on a appelé à juste titre le véritable fondateur de Lévis.

terrasse, à laquelle on a donné successivement les noms de terrasse Durham, Dufferin et Frontenac.

La façade principale du château, celle où se trouvaient le portique et la grande porte d'entrée—dans le pavillon du milieu,—donnait sur une vaste cour ayant environ 4 acres en superficie, entourée d'une muraille de 16 pieds de hauteur. "Du côté de l'ouest, deux forts bastions à chaque angle (de la muraille) étaient unis par une courtine, au centre de laquelle était une porte pour les sorties ; les autres faces de la muraille présentaient des ouvrages d'une description à peu près semblable, mais d'une moindre dimension."[1] "Un piquet de soldats montait la garde tant devant la grande porte que dans la cour ; et à l'entrée ou à la sortie du gouverneur et de l'évêque, ces militaires présentaient les armes, les tambours battant aux champs."[2]

Cette muraille avec ses bastions, c'était le fort Saint-Louis, espèce de citadelle qui renfermait le château, une prison, une poudrière, des corps de gardes et quelques autres bâtiments. L'ensemble ne manquait pas de grandeur ; l'aspect en était imposant.

Tout cela a disparu ; et la citadelle est montée d'un cran, plus forte, plus exposée aux regards, moins accessible au public.

Le promontoire de Québec s'élève, en effet, comme par trois échelons bien distincts. Le château Saint-Louis occupait celui du milieu ; l'évêché reposait sur l'échelon inférieur : c'était le premier édifice que l'on rencontrait à droite, en montant la côte de la basse ville. Il était vaste, ayant été bâti dans le but d'y établir un séminaire. Voici en effet ce qu'écrivait Mgr Dosquet en parlant du prélat (Mgr de Saint-Vallier) qui l'avait construit : "[3]

"Il est de notoriété publique qu'il voulait établir à l'évêché un séminaire, qu'il a commencé, et qu'il n'a discontinué que faute de sujets. Il a fait arracher de ce bâtiment tout ce qu'il a pu en ôter. Il se repentait de l'avoir fait, et s'il avait été en son pouvoir, il l'aurait vendu."[4]

En arrivant au Canada, en 1729, Mgr Dosquet trouva cet évêché dans un état pitoyable, et fut obligé d'y faire faire de très coûteuses réparations. Voici ce qu'il écrivait plus tard à la cour à ce sujet :

"Je laissai pendant deux ans l'appartement inhabitable, puisqu'on en avait enlevé le plancher, qui était pourri, et qu'il n'y avait point de pla-

[1] Bouchette, *Description topographique de la Province du Bas-Canada.*

[2] Kalm, *Voyage en Amérique.*

[3] "Il est probable que ce palais a été bâti avec le secours des gratifications ou des aumônes que M. de Saint-Vallier ramassait dans les voyages qu'il faisait en France ; il paraît qu'il ne le regardait pas comme une maison qui lui était propre...." (Lettre de Mgr Dosquet au ministre, 7 sept. 1731.)—"Mme de Maintenon faisait à M. de Saint-Vallier des gratifications considérables. Lui-même faisait, lorsqu'il venait en France, des quêtes à la cour et dans Paris. Un évêque lui donnait tous les ans 5,000 francs ; d'autres personnes de piété entraient dans les bonnes œuvres, et lui faisaient un revenu annuel." (Mémoire de Mgr Dosquet, 1738.)

[4] Lettre de Mgr Dosquet au ministre, 1731.

fond. On y avait mis simplement les soliveaux. Pendant ce temps je me tenais dans une mauvaise chambre. Enfin, M. de Léry, ingénieur, me représenta que le palais courait risque de tomber, si je n'y remédiais. Comme il est bâti sur une pente, le mur était ouvert de haut en bas. Il fit ôter tous les soliveaux, qu'il jugeait n'être pas assez forts, et il en fit mettre de gros comme des poutres, serrés l'un près de l'autre, et liés avec des bandes de fer pour soutenir le mur qui menaçait ruine. Il fit aussi recrépir tout le palais, parce que la pluie pénétrait à travers les pierres, et pourrissait les dedans.

" Ces réparations parurent à tous si nécessaires que je crus ne pouvoir refuser de faire ces avances. . . . Si je n'avais regardé que mon utilité personnelle, je me serais logé au séminaire, dans un pavillon que j'ai fait réparer à mes dépens, et où j'ai disposé un appartement pour un évêque. . . . [1] "

L'évêché était bâti en pierre, mais couvert en bardeaux. Il faillit brûler en 1734. Le gouverneur et l'intendant écrivaient à la cour :

" Le feu prit au toit par des étincelles sorties d'une cheminée. Le bardeau de la couverture s'enflamma si promptement que, sans le secours que nous y fîmes apporter, non seulement le palais épiscopal aurait été consumé, mais aurait causé un incendie général à la basse ville, la seule force de la flamme étant capable de transporter bien loin un bardeau léger et combustible tel qu'est le bardeau de bois de cèdre qui est en usage ici. . . . Nous concerterons avec M. l'évêque ce qu'il y aura de plus convenable, ou pour démolir entièrement le comble et y substituer une terrasse à l'italienne, ou, en laissant subsister la charpente, la faire couvrir de planches, de tuiles, d'ardoises, ou de fer blanc." [2]

Des trois résidences du gouverneur, de l'intendant et de l'évêque, celle de l'intendant était de beaucoup la meilleure, la plus comfortable, celle qui avait le plus de mine à l'extérieur. Elle était de date récente, le palais de l'intendant ayant brûlé dans la nuit du 5 au 6 janvier 1713, et ayant été rebâti ensuite.

C'était une bonne et grande maison en pierre, à deux étages, sans compter le rez-de-chaussée, et avec des pavillons ou avant-corps à chaque façade. Elle s'élevait au pied du côteau Sainte-Geneviève, à quelques pas de la rivière Saint-Charles : dans les environs se trouvaient le magasin du roi, le magasin aux poudres, le hangar aux affûts, des corps de garde, etc.

Une lettre de l'intendant Hocquart, en date du 8 octobre 1734, nous donne des détails intéressants sur l'intérieur et les divisions de ce palais : M. Hocquart s'excusait de ne pouvoir loger chez lui le contrôleur de la marine, M. Varin, comme on l'en avait prié :

" Il se trouvera au second étage du palais, disait-il, une chambre,

[1] Lettre de Mgr Dosquet au ministre, Rome, 6 janvier 1739.

[2] Lettre de Beauharnais et Hocquart au ministre, 7 octobre 1734.

avec peu de dépense, propre pour y établir le bureau du contrôle, et arranger tous les registres et papiers . . . mais il n'est pas possible que le sieur Varin puisse venir s'y établir et y loger avec sa femme, son domestique et la famille qui pourra lui venir.[1]

" Le rez-de-chaussée du palais, du côté de l'eau, consiste en caves et salles voûtées, dont partie est employée pour des cuisines, offices, caves pour légumes et à vin, et du côté du nord-est en trois voûtes où sont les archives.

" Le premier étage est vaste, à la vérité ; mais le vestibule,[2] la grande salle d'entrée et l'appartement où je loge au sud-ouest ne peuvent pas se diviser. Du côté du nord-est, sont les juridictions et salles des parties, et les bureaux des commis de l'intendance[3] et de mon secrétaire.

" Le second étage, si on en excepte la chapelle, n'est propre que pour y loger des domestiques, pour y mettre un garde-meubles. J'y ai seulement une chambre de réserve, et mon secrétaire la sienne. Le reste est en passage, et occupé par trois escaliers. De plus, la partie du nord-est est tellement exposée au vent, à la pluie et à la poudrerie,[4] qu'elle est inhabitable pour l'hiver.

" La relation nécessaire d'affaires que j'ai avec M. Varin, surtout pendant l'automne, m'a fait priver avec plaisir d'un cabinet attenant ma chambre, pour la facilité du service, et il peut y arranger, ou dans une autre que je ferai disposer, ses registres et ses papiers . . ."

Le roi accordait 300 francs pour la desserte de la chapelle intérieure du palais ; mais l'intendant Champigny se plaignait en 1699 que le service ne s'y faisait pas d'une manière régulière :

" Sa Majesté a la bonté d'ordonner 300 francs pour la messe dans la maison du palais où je demeure. Non seulement M. l'évêque nous en prive les grandes fêtes de l'année, celles de la Vierge et des apôtres, mais aussi une partie de l'été. Cependant, ajoutait-il, il y a beaucoup de nécessité de l'y faire dire tous les jours, tant à cause du conseil et de la

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[1] Jean-Victor Varin, conseiller et contrôleur de la marine, avait épousé à Montréal l'année précédente, 19 octobre 1733, Charlotte Liénard de Beaujeu.

[2] Ce vestibule, au-dessus duquel était la chapelle, était " pavé de pierre plate ". (Lettre de Beauharnais au ministre, 5 novembre 1729).

[3] Les emplois dans le service civil étaient aussi recherchés qu'aujourd'hui. M. Lanouiller de Boisclair écrit au ministre le 28 octobre 1736 : " Je vous supplie de vouloir bien accorder à mon fils aîné, qui a 17 ans, une place d'élève dans les bureaux de l'intendance. M. Hocquart a bien voulu l'employer en cette qualité depuis un an, et il m'a paru assez content de son travail. Je me flatte que dans quelques années il se rendra capable de remplir une place d'écrivain, et qu'il se mettra en état de mériter vos bontés . . ."

[4] Notons ici ce mot *poudrerie*, un mot " du cru canadien ", suivant l'expression d'Oscar Dunn. Des Français comme M. Hocquart et Montcalm ne craignent pas de l'employer, même dans leurs dépêches officielles, parce qu'il exprime parfaitement ce qu'ils veulent dire :

. . . . Si volet usus,
Quem penès arbitrium est et jus et norma loquendi.

prévôté, que pour les prisonniers, et les infirmes du quartier, qui est bien peuplé, se rencontrant plus de difficultés à aller de là à la paroisse pendant l'hiver, que de la basse ville."

Du reste, peut-être par esprit d'opposition au gouverneur, dont la chapelle était desservie, comme nous l'avons vu, par les récollets, les intendants ne voulaient pas de ces religieux pour aumôniers.[1] Le chapitre, qui était chargé de la desserte du palais, aurait aimé à y envoyer quelquefois un récollet; mais l'intendant s'y opposait, et s'était fait donner des instructions par la cour à ce sujet. M. Hocquart écrivait au ministre en 1731 :

"J'exécuterai exactement vos ordres, disait-il, en ne me relâchant point sur l'obligation où sont les chanoines de faire dire par l'un d'eux la messe au palais, ainsi qu'ils y sont obligés par les lettres patentes du mois de septembre 1713.[2] Je continuerai, au surplus, de fournir à celui qui est dans l'usage de l'acquitter, une voiture, dans les mauvais temps."[3]

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J'ai essayé de donner une idée aussi exacte que possible de l'aspect physique de Québec en 1730. Quant à son aspect social, voici ce que Charlevoix écrivait dix ans auparavant : il n'est pas probable que le tableau eût beaucoup changé :

"On ne compte guère à Québec, disait-il, que sept mille âmes; mais on y trouve un petit monde choisi, où il ne manque rien de ce qui peut former une société agréable. Un gouverneur général avec un état-major, de la noblesse, des officiers et des troupes; un intendant avec un conseil supérieur et les juridictions subalternes; un commissaire de marine, un grand prévôt, un grand voyer et un grand maître des eaux et forêts, dont la juridiction est assurément la plus étendue de l'univers; des marchands aisés, ou qui vivent comme s'ils l'étaient; un évêque et un séminaire nombreux; des récollets et des jésuites; trois communautés de filles, bien composées; des cercles aussi brillants qu'il y en ait ailleurs chez la gouvernante et chez l'intendante : voilà, ce me semble, pour toutes sortes de personnes, de quoi passer le temps fort agréablement.

"Ainsi fait-on, et chacun y contribue de son mieux. On joue, on fait des parties de promenades; l'été en calèche ou en canot, l'hiver en traîne sur la neige ou en patins sur la glace. On chasse beaucoup; quantité de gentilshommes n'ont guère que cette ressource pour vivre à leur aise.

[1] Lettre de Mgr Dosquet au ministre, 7 septembre 1731.

[2] *Edits et Ordonnances*, t. I, p. 339.

[3] L'intendant, du reste, se contentait assez facilement d'un prêtre séculier, quand même il n'était pas chanoine. L'aumônier du palais fut assez longtemps un abbé Richard, qui, après avoir été curé de Saint-Thomas, s'était retiré du saint ministère. (*Jugements du Conseil supérieur*, 17 juillet 1724.—Lettre de Beauharnais et Hocquart au ministre, 25 octobre, 1729.)

"Les nouvelles courantes se réduisent à bien peu de choses, parce que le pays n'en fournit presque point, et que celles d'Europe arrivent tout à la fois, mais elles occupent une bonne partie de l'année. On politique sur le passé, on conjecture sur l'avenir. Les sciences et les beaux-arts ont leur tour, et la conversation ne tombe point.

"Les Canadiens, c'est-à-dire les créoles du Canada, respirent en naissant un air de liberté qui les rend fort agréables dans le commun de la vie, et nulle part ailleurs on ne parle plus purement notre langue. On ne remarque même ici aucun accent.

"On ne voit point en ce pays de personnes riches, et c'est bien dommage, car on y aime à se faire honneur de son bien, et personne presque ne s'amuse à thésauriser. On fait bonne chère, si avec cela on peut avoir de quoi se bien mettre; sinon, on se retranche sur la table pour être bien vêtu. Aussi faut-il avouer que les ajustements font bien à nos créoles. Tout est ici de belle taille, et le plus beau sang du monde dans les deux sexes; l'esprit enjoué, les manières douces et polies sont communes à tous; et la rusticité, soit dans le langage, soit dans les façons, n'est pas même connue dans les campagnes les plus écartées. . . .

"Tout le monde a ici le nécessaire pour vivre; on y paie peu au roi; l'habitant ne connaît point la taille; il y a du pain à bon marché; la viande et le poisson n'y sont pas chers; mais le vin, les étoffes et tout ce qu'il faut faire venir de France y coûtent beaucoup. Les plus à plaindre sont les gentilshommes et les officiers qui n'ont que leurs appointements et qui sont chargés de famille. Les femmes n'apportent ordinairement à leurs maris que beaucoup d'esprit, d'amitié et d'agréments, et Dieu répand sur les mariages, dans ce pays, la bénédiction qu'il répandait sur ceux des patriarches."

A ce tableau, peut-être un peu flatté, du P. Charlevoix, la sœur Duplessis, avec son impitoyable pinceau, ajoute quelques ombres nécessaires : [1]

"Nous sommes, écrivait-elle en 1730, dans un pays qui devient plus dur que jamais : nous n'y voyons rien qui puisse plaire; on n'y parle que de misère, de mauvaise foi, de calomnie, de procès, de divisions. Tout le monde se plaint, et personne ne remédie à rien. Je crois que Dieu châtie cette colonie pour les crimes qui s'y commettent, et les bons souffrent avec les méchants, les uns pour s'épurer, les autres pour faire pénitence."

Elle ajoutait, à propos d'un fléau que la mère de l'Incarnation déplorait déjà de son temps : [2]

"La médisance et la calomnie règnent en Canada au delà de ce qu'on en peut penser. Notre vocation nous expose à une grande communication avec le prochain, en sorte que, malgré notre profession régulière, nous n'ignorons presque rien des mauvais bruits d'une ville."

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[1] *Lettres de la R. M. Marie-André Regnard-Duplessis de Sainte-Hélène*, de l'Hôtel-Dieu de Québec.

[2] *Lettres de Marie de l'Incarnation*, édit. Richaudeau, t. II, p. 142.

M. de Beauharnais, gouverneur du Canada, expliquait d'une manière très plausible cette manie de faire des commérages qu'il avait trouvée au Canada à un degré alarmant :

" Ce qui donne occasion, disait-il, en ce pays-ci, à tous ces faiseurs de rapports, c'est le peu d'occupation pendant l'hiver, et le vide de nouvelles depuis le départ des vaisseaux jusqu'à leur retour."

Il s'affligeait d'être souvent lui-même l'objet de tous ces bavardages. Ecrivant un jour au ministre :

" Permettez-moi, disait-il, de vous représenter, monseigneur, à l'occasion des calomnies répandues contre les uns et les autres, et de celles qu'on a écrites contre moi, que s'il est permis d'en imposer à la cour sans en rien craindre, il n'y point de galant homme dans ce pays—où la calomnie me paraît régner à l'excès—qui ne soit exposé aux traits les plus malins de ces sortes d'écrivains, ce qui aurait de grands inconvénients."

Quant à la misère matérielle dont se plaignait en 1730 la sœur Duplessis, elle s'expliquait en grande partie par la rigueur extraordinaire de l'hiver que l'on venait de traverser. M. Hocquart écrivant le 16 mai : " L'hiver a été fort long cette année, disait-il : l'on ne fait actuellement que de commencer les semences." Et l'hiver précédent n'avait pas été moins rigoureux :

" L'hiver de 1729, dit Garneau, fut pour le Canada ce que celui de 1709 avait été pour la France. Les habitants furent obligés de vivre de bourgeons, et de ce qu'on regardait alors comme n'étant guère plus nourissant, de pommes de terre. Plusieurs personnes moururent de faim. C'est pendant cette disette, en 1730, que le gouvernement fit faire à Québec la digue du Palais, recouverte aujourd'hui par des quais, pour occuper les habitants et former un abri où cent bâtiments pussent trouver un hivernage commode."

La sœur Duplessis écrivait encore en 1729 : " Nous avons passé une triste année, qui n'a été que la suite des troubles qui se sont élevés dans ce diocèse depuis la mort de Mgr de Saint-Vallier. Nous avons vu, il y a deux ans, une guerre ouverte entre le chapitre et le conseil. Il y eut plusieurs arrêts rendus, des conseillers exilés par notre gouverneur, qui ont été rétablis, cette année, par ordre de la cour."

Les troubles soulevés à Québec et dans tout le pays, à l'occasion de la mort et de la sépulture de Mgr de Saint-Vallier, l'incertitude dans beaucoup d'esprits au sujet des représentants véritables de l'autorité ecclésiastique, la guerre ouverte du conseil supérieur et de l'intendant contre le chapitre, la rigueur déployée par le chapitre contre quelques communautés religieuses, puis enfin la longueur de l'interrègne épiscopal,[1] tout

[1] Il n'y eut pas *interrègne*, dans le sens strict du mot, puisque Mgr de Mornay, coadjuteur *cum futurâ successione* de Mgr de Saint-Vallier, devint évêque de Québec, *ipso facto*, à la mort du prélat, le 26 décembre 1727. Mais il était en France, et bien

cela avait créé une grande perturbation morale à Québec. L'arrivée de l'évêque dans l'automne de 1729 avait un peu calmé les esprits ; mais il y avait encore du malaise.

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Mgr Dosquet, évêque de Samos *in partibus*, qui administrait le diocèse de Québec en 1730, est le seul évêque de la Nouvelle-France, sous l'ancien régime, qui ne fut pas français.[1] Il était Flamand, natif du diocèse de Liège, dans les Pays-Bas.[2] C'est précisément à sa qualité "d'étranger" au royaume que MM. de Beauharnais et Hocquart attribuaient en partie le peu de succès qu'il avait eu au Canada. Ecrivant à la cour lors de son départ de Québec en 1735 :

"Nous sommes persuadés disaient-ils, que Mgr Dosquet n'a eu que des intentions droites et pures pendant le temps qu'il a gouverné l'Eglise du Canada. Mais il a eu le malheur que la plus grande partie des ecclésiastiques et les communautés religieuses ont regardé son gouvernement comme trop absolu, ce qui a éloigné la confiance que les uns et les autres auraient pu avoir en lui.

"Peut-être aussi qu'étant né hors du royaume, les peuples n'ont point aperçu en sa personne des sentiments aussi tendres qu'aurait pu avoir un évêque français, comme l'étaient ses prédécesseurs."[3]

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décidé à ne jamais passer au Canada. Au printemps de 1728, ne se croyant encore que coadjuteur, il donna sa démission en cette qualité; mais cette démission se trouva nulle, puisqu'il était déjà, sans s'en douter, évêque de Québec : et lorsqu'il apprit qu'il avait ainsi succédé à Mgr de Saint-Vallier, il résolut de prendre possession de son siège, y compris les revenus (Lettre de Mgr Dosquet au ministre, 29 août 1730), ce qu'il fit en effet par procuration dans l'automne de 1728, sans vouloir pour cela passer en Amérique. Il y eut donc *quasi-interrègne* à Québec, tant qu'on n'y eut pas de nouvelles de Mgr de Mornay, et un interrègne d'autant plus fâcheux, que l'on était divisé sur la question de savoir quel était, dans ce cas, du chapitre avec son vicaire capitulaire, ou bien de l'archidiacre M. de Lotbinière, le représentant légitime et canonique de l'autorité ecclésiastique. L'interrègne se prolongea, mais avec moins d'inconvénients, jusqu'à l'arrivée, dans l'automne de 1729, de Mgr Dosquet, qui venait administrer le diocèse comme coadjuteur de Mgr de Mornay. Celui-ci se démit de son évêché le 12 septembre 1733, et mourut le 28 novembre 1741, à l'âge de soixante et dix-huit ans, "écrasé par un carosse" dans les rues de Paris, nous apprend un chroniqueur. Mgr Dosquet quitta le Canada en 1735 pour n'y plus revenir, se démit, lui aussi, de son évêché en 1739, et mourut à Paris en 1777 à l'âge de quatre-vingt-six ans.

[1] Il était déjà évêque lorsque Mgr de Mornay le demanda et l'obtint pour son coadjuteur en 1728, ayant été sacré à Rome en 1725 par le pape Benoit XIII. Il n'avait pas été fait évêque pour le Canada, mais pour les Indes, où il devait aller comme vicaire apostolique.

[2] *Vie de la Sœur Bourgeois*, par l'abbé Faillon, t. II, p. 282.

[3] On l'a fait naître à Lille. (*Liste chronologique* de M. Noiseux.—*Les Evêques de Québec*, par Mgr Têtu.) C'est évidemment une erreur. Lorsque Mgr Dosquet naquit en 1691, il y avait déjà longtemps que Lille appartenait à la France, et que Louis XIV avait incorporé à son royaume cette partie des Flandres, appelée la Flandre française. Non : Mgr Dosquet est né à Liège (*Luick*), dans le diocèse de

Mgr Dosquet savait se prévaloir, au besoin, de son titre " d'étranger ". Ecrivant un jour à la cour, au sujet de sa démission qu'il avait offerte, il demandait qu'on l'indemnisât pour les travaux qu'il avait fait faire à ses frais au Canada :

" Si la cour me fait cette grâce, disait-il, elle me trouvera toujours disposé à employer à son service ce qu'elle m'aura donné, et le revenu qui me reste de mon bien. Je m'explique : étant né étranger, je serais peut-être moins suspect qu'un Français pour quelques négociations secrètes dans différents pays ; et je me flatte qu'avec les instructions qu'on me donnerait je pourrais réussir. . . ."

Un autre obstacle au succès de ce prélat comme évêque dans la Nouvelle-France, ce fut l'impopularité de son grand vicaire, qu'il avait amené avec lui, homme instruit, mais trop jeune, trop plein de lui-même, et auquel il avait fait conférer par la cour, avant son départ, les charges importantes et lucratives de conseiller-clerc au conseil supérieur et de doyen du chapitre,[1] comme s'il n'avait pas soupçonné qu'il pouvait y avoir chez les Canadiens des prétentions justifiées à remplir ces fonctions. Ce grand vicaire, M. de Latour, était tout, à Québec ; l'évêque ne paraissait là que pour le décor :

" Nous avons, écrivait en 1730 la sœur Duplessis, un nouveau prélat, qui ne fait rien par lui-même. Il a un grand vicaire de vingt-huit ans, à qui il renvoie le détail du diocèse. Quelque bien intentionnés qu'ils

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Liège. C'est là, dans son pays natal, qu'on le voit se rendre, chaque fois qu'il passe du Canada en France. Il y est en pays de connaissances : on s'y occupe de son avancement : il écrit un jour au ministre : " Le suffragant de Liège est mort. L'on m'écrit en secret que le Prince a dessein de m'offrir cette place. Je l'ai déjà refusée deux fois . . . ." (Lettre de Mgr Dosquet au ministre, Paris, 8 octobre 1736.)

Il avait un compatriote à Québec, Joseph de l'Estre du Vallon, originaire du Haynault. Il le créa, en 1730, "chevalier de Saint-Jean de Latran ", et lui en donna la croix : " Mon bref d'évêque assistant au trône apostolique, écrit-il au ministre, me donne, avec beaucoup d'autres prérogatives, le pouvoir de faire des protonotaires apostoliques et sept chevaliers. Je demandai ensuite au pape que le nombre ne fût pas fixé, et que je pusse en faire autant que je souhaiterais. Cette grâce me fut accordée."

Mais le ministre écrivit à M. de Beauharnais pour lui rappeler la déclaration du roi "au sujet des ordres étrangers ", et fit défense au sieur du Vallon " de porter sa croix ".

[1] Le doyen du chapitre avait double prébende. Il paraît cependant que M. de Latour n'était pas content de sa pitance : " Les ecclésiastiques qui composent le chapitre ont entre eux des discussions d'intérêt pour lesquelles ils ont fait saisir les uns sur les autres leurs revenus. Le sieur de Latour, doyen, et deux chanoines avec lui, n'ayant pas été satisfaits de la portion qui leur avait été assignée, ont obtenu du vice-gérant de l'officialité une sentence portant permission de saisir les revenus du chapitre entre les mains du trésorier du dit chapitre, de laquelle sentence les autres chanoines ont appelé comme d'abus au conseil, et cependant à leur tour avaient fait saisir les revenus du dit sieur doyen. Le conseil a déclaré l'abus par son arrêt, et a condamné le sieur de Latour et les deux chanoines aux dépens. . ." (Lettre de Beauharnais et Hocquart au ministre, 22 octobre 1730.)

scient, comme ils ne font que d'arriver,—il n'y a qu'un an qu'ils sont en Canada,—et qu'ils ne s'informent pas des usages anciens, mais prétendent établir des règlements beaucoup plus sages que tout ce qui les a précédés, nous nous trouvons si désorientées que nous ne savons où nous en sommes. . . ."

Laissé à lui-même, ou plutôt assisté des conseils, non seulement d'un seul homme ou d'une coterie, mais des principaux membres de son chapitre et de son séminaire, il est probable que le prélat aurait fait du bien. On avait confiance en lui, lorsqu'il arriva à Québec :

"Le coadjuteur est un saint homme, qui d'avance avait été fort goûté ici,[1] écrivait M. de Beauharnais le 5 novembre 1729. Il y était connu pour tel. Il s'occupe à mettre tout en règle. Il est net et précis dans ses décisions. Ainsi, monseigneur, il y a toute apparence que vous n'entendrez plus rien de ce pays-ci que de très agréable. . . ."

Ce fut le contraire qui arriva. Les prêtres canadiens ne purent se faire aux manières hautes et "cavalières" de M. de Latour, et quelques-uns s'en plaignirent en France. De son côté, l'évêque les traita "d'esprits brouillons, indociles, indépendants, insolents". Ecrivant à la cour :

"Si l'on examine, disait-il, la conduite de ces gens qui se plaignent, on verra que ce n'est qu'en vue d'entretenir de la division et du trouble dans le clergé. Ce sont des esprits brouillons qui se plaisent dans le désordre. Ils ne peuvent ni être en paix, ni y laisser les autres."[2]

"Je sens, ajoutait-il, combien il est désagréable à un évêque d'être dans ce pays-ci, s'il est obligé d'employer son temps à répondre à tout ce que des esprits oisifs et turbulents peuvent inventer contre lui, comme je sais que l'on a fait l'automne dernier. . . ."[3]

Il réussit même à se procurer une lettre de cachet pour faire passer en France un prêtre canadien, le chanoine Fornel, qui n'avait pas su gagner les bonnes grâces de son grand vicaire.[4] Heureusement que cet ordre de la cour ne fut pas mis à exécution.

Pendant l'interrègne qui avait suivi la mort de Mgr de Saint-Vallier, le chapitre, outrepassant ses droits, avait nommé des curés fixes à un certain nombre de paroisses. Un des premiers actes de Mgr Dosquet fut d'exiger de ces curés "qu'ils lui remissent leurs titres". La plupart le firent, mais "non sans beaucoup de répugnance", écrivait M. de Beauharnais.[5] L'un d'eux, cependant, M. Voyer, curé de Sainte-Anne-de-la-Pérade, refusa d'obéir à l'évêque et de remettre sa cure :

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[1] Mgr Dosquet avait déjà passé deux ans au Canada comme simple prêtre, de 1721 à 1723. Il était alors sulpicien, et on lui avait confié la direction des sœurs de la Congrégation, à Montréal.

[2] Lettre de Mgr Dosquet au ministre, 29 octobre 1730.

[3] *Ibid.*, 19 octobre 1730.

[4] Lettre de Beauharnais et Hocquart au ministre, 12 octobre 1731 ; lettre de M. de Maurepas à Beauharnais et Hocquart, Versailles, 27 avril 1731.

[5] Lettre de Beauharnais au ministre, 12 octobre 1731.

"Le coadjuteur, piqué de ce procédé, fit ôter par son archidiacre, alors en visite sur les lieux, les pouvoirs au sieur Voyer de prêcher et de confesser. Cette punition ne l'ayant pas réduit aux termes de l'obéissance, le dit sieur archidiacre, en conséquence des ordres du coadjuteur, et après trois monitions, rendit son ordonnance qui déclare le sieur Voyer suspens, et commet le P. Luc, récollet, pour desservir Sainte-Anne jusqu'à nouvel ordre." [1]

L'affaire fut portée au conseil ; elle fut l'objet d'un procès, et l'on vit se renouveler quelques-unes des scènes qui avaient affligé l'Eglise du Canada après la mort de Mgr de Saint-Vallier.

Les circonstances qui avaient accompagné la sépulture de ce prélat [2] et surtout les actes de rigueur qui l'avaient suivie, entre autres l'interdiction de l'église de l'hôpital général et des religieuses, avaient laissé un grand malaise dans cette communauté. Il aurait fallu beaucoup de douceur et de ménagements pour corriger les abus, s'il y en avait, et faire rentrer tout le monde dans la voie du devoir. Au contraire, M. de Latour paraît avoir été haut la main dans l'exercice de ses fonctions de supérieur de l'hôpital général. C'est ainsi que la supérieure de cette communauté étant morte, il s'y rendit dès le lendemain, et fit procéder immédiatement à l'élection d'une autre supérieure, malgré les protestations d'un certain nombre de religieuses, qui auraient voulu que tout se fît "d'une manière canonique, suivant leurs règles et constitutions". [3]

Ce qui est encore plus grave, c'est qu'il réussit à préjuger affreusement le prélat contre cette communauté. On ne peut croire, en effet, qu'elle fût devenue "décriée par sa mauvaise conduite, la fable du public, un lieu d'amusette", comme il la représente dans une de ses lettres à la cour.[4] Il alla même jusqu'à proposer de lui enlever son autonomie, pour la mettre sous la dépendance de l'Hôtel-Dieu :

"Il me paraîtrait avantageux, écrit-il, de remettre cette communauté sur le pied qu'elle a été établie, savoir, qu'elles ne fussent que douze religieuses, et dépendantes de la supérieure de l'Hôtel-Dieu de Québec, comme elles ont été pendant plusieurs années." [5]

C'est évidemment à l'occasion de toutes les choses regrettables qu'elle

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[1] Lettre de Beauharnais et Hocquart au ministre, 10 octobre 1730.

[2] Voir Garneau, *Histoire du Canada*, t. II, p. 116.

[3] Lettre de Beauharnais et Hocquart au ministre, 6 octobre 1731. D'après eux, c'est M. de Latour lui-même qui fit l'élection : "Les huit religieuses (opposées) s'étant retirées dans leurs cellules, le grand vicaire nomma une supérieure pour deux ans, et fit faire par les neuf vocales restantes l'élection des officières."

Le gouverneur et l'intendant ajoutaient au sujet de l'hôpital général : "Nous pouvons vous assurer, monseigneur, que le très grand désordre dont vous avez été informé se réduit à quelques tracasseries assez communes dans les communautés de filles. Elles ont d'ailleurs une conduite régulière, et elles ont continué leurs attentions charitables pour les invalides et les insensés renfermés dans leur maison."

[4] Lettre de Mgr Dosquet au ministre, 16 octobre 1730.

[5] *Ibid.*

voyait et entendait, que la bonne sœur Duplessis, de l'Hôtel-Dieu, écrivait en 1730 :

"Les communautés se ressentent de ces maux : elles sont sans protection : ceux qui devraient en être les appuis, ne se croient pas obligés de les soutenir. . . ."

La cour, suivant son usage de ne donner entièrement gain de cause à personne, adressait des avertissements à tout le monde. M. de Maurepas écrit de Marly au gouverneur et à l'intendant :

"J'écris à M. le coadjuteur de continuer à rétablir l'ordre et la règle dans l'Eglise du Canada ; mais je lui recommande en même temps de le faire avec la prudence et les ménagements convenables."

"A l'égard du sieur Hazeur,[1] ajoute-t-il, Sa Majesté souhaite que vous lui expliquiez que s'il ne se conduit pas mieux qu'il n'a fait par le passé. Sa Majesté donnera des ordres pour le mettre en règle. Elle veut aussi que vous expliquiez aux chanoines en général et en particulier qu'Elle est informée de leur insubordination et de leur relâchement dans leurs fonctions. Vous les avertirez d'effacer par une conduite toute différente les mauvaises impressions qu'ils ont données contre eux, et de se comporter de manière qu'il ne revienne plus de plainte à leur sujet."

On conçoit combien de pareils avertissements devaient aigrir les prêtres canadiens contre leur évêque,[2] et surtout contre son grand vicaire, qui, dans leur opinion, l'indisposait contre eux. De son côté, le prélat les voyait d'un si mauvais œil, qu'il proposait sérieusement à la cour d'envoyer au Canada des prêtres français "pour inspirer aux peuples la fidélité, l'amour et le zèle que des sujets doivent à leur roi. Mon idée serait, ajoutait-il, de mettre un curé français entre deux paroisses gouvernées par des prêtres canadiens."[3] Il est évident que toutes ces idées étaient inspirées au prélat flamand par son grand vicaire français, M. de Latour.

Mgr Dosquet finit par se débarrasser d'un grand vicaire si malencontreux : Louis-Bertrand de Latour repassa en France en 1731. Mais le

[1] L'un des deux frères Hazeur, tous deux chanoines, fils de François Hazeur, ancien conseiller et marchand de Québec. L'autre était à Paris, s'occupant des affaires du chapitre : il adressait à ses amis du Canada des lettres, dont le coadjuteur n'était pas content :

"M. de l'Orme, dit-il, mande à plusieurs personnes que la cour blâme fort la conduite que j'ai tenue l'automne dernier, et qu'elle m'en fait des réprimandes . . . . Il se vante d'avoir gagné plusieurs chapitres de France, qui doivent s'unir à lui pour soutenir sa cause. Vous ne sauriez croire les mauvais effets que ces discours ont produits. Chacun y fait sa glose à sa manière. On est surpris que je ne sois pas rappelé . . . ." (Lettre de Mgr Dosquet au ministre, 19 octobre 1730.)

[2] Le gouverneur et l'intendant prirent sur eux de n'en admonester que quelques-uns. "Nous n'avons pas cru que les autres méritassent l'avertissement que vous nous ordonnez de leur faire : cela les aurait confirmés dans l'opinion où ils sont que M. le coadjuteur ne les aime pas." (Lettre de Beauharnais et Hocquart au ministre, 12 octobre 1731.)

[3] Lettre de Mgr Dosquet au ministre, 17 septembre 1731.

mal était fait ; et le prélat ne réussit plus à regagner complètement "la confiance" qu'il avait perdue.

Son épiscopat, d'ailleurs, fut de courte durée. Mgr Dosquet ne resta en tout que quatre ans au Canada, comme évêque : trois ans en qualité de coadjuteur de Mgr de Mornay, de 1729 à 1732, et une seule année comme évêque en titre de Québec, de 1734 à 1735. Il ne donna sa démission, ou du moins elle ne fut acceptée, qu'en 1739 ; mais repassé en France en 1735, il ne revint plus au Canada.

En temps ordinaire, il aurait pu faire un excellent évêque. Sa correspondance, que j'ai parcourue, dénote un homme instruit, éclairé, jugeant bien les choses quand la passion ou le préjugé ne faisaient pas dévier son esprit. On constate, par exemple, avec plaisir qu'il apprécie avec justesse l'œuvre de Mgr de Laval, et partage ses vues par rapport à la fixation des cures, question éternellement soulevée par la cour et les gouverneurs :

"La manière de desservir les Eglises, écrit-il, est purement de discipline, différant selon les temps, les lieux et les besoins des peuples. C'est donc aux usages et aux besoins du pays qu'il faut s'en rapporter. Jamais il n'a été fait dans l'Eglise de loi générale qui oblige les évêques à fixer tous les curés ; mais y en eût-il pour les pays établis, il n'en fut jamais pour les églises naissantes, où il ne serait ni avantageux ni possible de l'exécuter ; en particulier, au Canada, on n'en a jamais observé ni connu de pareille ; et en cela on ne fait que suivre l'usage de la primitive Eglise . . . ."

Le prélat partageait également les vues de ses prédécesseurs par rapport à la traite de l'eau-de vie. Son mandement du 26 novembre 1730, par lequel il se réservait l'absolution du péché de ceux "qui distribuaient aux sauvages des liqueurs enivrantes", en est une preuve.[1] Les autorités coloniales se récrièrent contre ce mandement et contre le cas réservé, prétendant que "les sauvages allaient se détacher insensiblement des Français, pour commercer avec les Anglais".[2]

D'un autre côté, le prélat n'avait donné ce mandement, que parce que ses missionnaires s'étaient plaints "de ce qu'il ne marchait pas sur les traces de ses prédécesseurs, qui avaient défendu et condamné publiquement la traite de l'eau-de-vie".[3] Théologien instruit, et enclin à la modération, il disait : "L'évêque ne peut se réserver un péché, qu'il ne soit mortel."[4] Mais ses opinions modérées ne plaisaient pas aux missionnaires, préjugés contre lui : "Je suis obligé, disait-il, de modérer leur zèle trop indiscret."[5]

Il eut le malheur de venir ici comme évêque à une époque où l'Eglise du Canada était encore toute troublée par les dissensions qui avaient suivi

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[1] *Mandements des Evêques de Québec*, t. I, p. 535.
[2] Lettre de Beauharnais et Hocquart au ministre, 1er octobre 1732.
[3] Lettre de Mgr Dosquet au ministre, Paris, 23 janvier 1733.
[4] *Ibid.*
[5] *Ibid.*

la mort de Mgr de Saint-Vallier. Pour concilier les esprits et faire régner la paix, il aurait fallu un ensemble de qualités qu'il ne possédait pas à un degré suffisant.

La comparaison entre ce prélat, de vertus réelles, mais ordinaires, et ses prédécesseurs, les Montmorency-Laval et les Saint-Vallier, ces hommes apostoliques, d'un dévouement à toute épreuve, prêts à tous les sacrifices, ne lui était pas favorable : il n'était pas évidemment de leur race. On n'aime guère à l'entendre parler de ses dettes criardes,[1] ou de la modicité de son revenu, réclamer une indemnité[2] pour les réparations qu'il a fait faire à ses frais au palais épiscopal, s'assurer d'une bonne abbaye avant de donner sa démission.[3] On aime encore moins le voir solliciter une place de lieutenant pour son neveu Louis Jaquet, qu'il emmène avec lui au Canada et fait vivre à même la mense épiscopale.[4] Mgr de Laval vivant tout simplement dans une cellule de son séminaire ou dans l'humble retraite de Saint-Joachim, Mgr de Saint-Vallier, dans sa modeste chambre de l'hôpital général, nous apparaissent autrement plus grands que Mgr Dosquet dans sa villa de Samos.[5] Laval et Saint-Vallier se contentaient d'un ou deux serviteurs. En parlant de Laval, la mère de l'Incarnation écrivait : " Il n'a qu'un jardinier, qu'il prête aux pauvres gens, quand ils en ont besoin, et un homme de chambre . . ."[6] Au contraire, le personnel entretenu par Mgr Dosquet,[7] et qu'il ramène avec lui du Canada en France, paraît bien encombrant, surtout pour un pauvre homme : je n'y compte pas moins de onze personnes : en voici la liste : " M. Proteau, son aumônier ; M. Mouchard, ecclésiastique[8] ; M. Richer, ecclésiastique ; M. de la Croix, secrétaire ; le nommé Le Roy, maître d'hôtel ; le nommé Lamine, valet de chambre ; le nommé Falvet, cuisinier ; le nommé Richard, aide

[1] Lettres de Mgr Dosquet au cardinal Fleury, Paris, 4 mai 1734 ; au ministre, Paris, 7 février 1733.

[2] Ayant fait naufrage avant d'arriver à Québec, à quelques lieues de la ville, en 1729, et perdu tous ses effets, il reçut pour cette perte une juste indemnité. (*L'Abeille* du petit séminaire de Québec.)

[3] Lettres de Mgr Dosquet au ministre, Rome, 24 avril 1737 ; 16 juillet 1738 ; 25 août 1738 ; 6 février 1739 ; 13 mars 1739.

[4] Lettre de Mgr Dosquet au ministre, Paris, 11 mai 1734.

[5] " Ma campagne, près de la ville, où j'ai fait bâtir une maison " (Dosquet au ministre, 6 février 1739.)—Magnifique résidence située à l'endroit où est aujourd'hui le cimetière de Saint-Patrice : " C'est sous les pins murmurants de Samos, écrit sir James LeMoine, que les fils de Saint-Patrice, transplantés sur nos rives, vont maintenant goûter le long sommeil et l'oubli de leurs nombreux griefs, réels ou imaginaires, en la verte Erin. Que la terre leur soit légère ! " (*Monographies et Esquisses.*)

[6] *Lettres de Marie de l'Incarnation*, t. II, p. 169.

[7] L'évêque écrivait en 1738 : " Il faut faire venir les domestiques de France, à qui l'on donne de gros gages, et qui se marient dès qu'ils ont fait des connaissances dans le pays."

[8] M. Jacques Viger dit quelque part, en plaisantant, qu'il n'y eut jamais qu'un seul *mouchard* parmi les ecclésiastiques du Canada. (*Répertoire du Clergé canadien*, p. 98.)

de cuisine; le nommé Pouzain, cocher; le nommé Parisien, laquais; le nommé Dominique, nègre." [1]

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Mgr Dosquet avait apporté de son pays natal, la Belgique, un vif amour de l'agriculture et des aptitudes toutes spéciales pour l'exploitation d'une ferme. Aussi ne faut-il pas être surpris, si, à peine arrivé au Canada, il sollicite de la cour une seigneurie, afin de l'utiliser à son profit, et d'y établir une espèce de ferme expérimentale pour l'instruction de la classe agricole :

" Je vois, disait-il, plusieurs seigneuries accordées depuis longtemps, où les terres sont bonnes, et où il n'y a rien de défriché. J'en ai recherché la cause : on m'a dit que c'est qu'il n'y avait pas de moulins. Il me paraît cependant que les blés et les bestiaux sont les fruits les plus solides qu'on puisse espérer, dans la suite, de ce pays-ci. Le paysan élève plus volontiers des chevaux que des bœufs, ce qui les a rendus si rares qu'on a manqué de viande ce printemps. J'ai dessein de leur faire voir par l'expérience l'avantage qu'ils retireraient d'élever plus de bêtes à cornes. Je vous prie de m'obtenir de Sa Majesté une seigneurie pour cet effet. J'y ferai toutes les dépenses nécessaires pour les moulins et la culture des terres, quoique je sache qu'elle me coûtera plus que je n'en retirerai pendant ma vie; mais je regarde comme une aumône bien placée l'argent qu'on emploie à faire travailler les pauvres; et il y en a beaucoup aux environs des Trois-Rivières.

" La seigneurie que je demande en est éloignée de dix à douze lieues, sur la rivière Yamaska. Je souhaiterais quatre lieues de front sur quatre lieues de profondeur des deux côtés de cette rivière, sur les terres non concédées, ensuite de la seigneurie accordée autrefois (1695) à M. de Bourchemin . . . J'espère que la cour m'accordera cette grâce, en vue des avantages qui en reviendront à la colonie, puisque c'est un fonds que je retirerai d'un pays étranger pour l'établir dans celui-ci. . . ." [2]

Il ajoutait quelques jours plus tard : " Comme j'espère que vous aurez la bonté de m'obtenir la concession d'une seigneurie, dont j'ai eu l'honneur de vous parler, j'écris à Rochefort que l'on m'achète une moulange. Je vous prie de vouloir bien ordonner qu'on la charge dans le vaisseau du roi pour y servir de lest. . . ." [3]

Mgr Dosquet obtint en effet l'année suivante la seigneurie qu'il avait sollicitée.[4] Mais son départ du Canada, quelques années plus tard, l'empêcha sans doute d'en tirer le parti qu'il avait en vue, et dérangea ses plans.

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[1] Tous ces personnages, ainsi que l'évêque, étaient " à la table ou à l'office du capitaine " ; le laquais et le nègre, seuls, étaient " à la ration du munitionnaire ".

[2] Lettre de Mgr Dosquet au ministre, 14 octobre 1730.

[3] *Ibid.*, 23 octobre 1730.

[4] Lettre de Beauharnais et Hocquart au ministre, 15 octobre 1731.

Il y avait, dans le clergé canadien, une véritable épidémie d'entreprises commerciales et industrielles, que l'exemple de l'évêque n'était pas de nature à enrayer. M. Lepage, surtout, paraît avoir été le Mgr Labelle de l'époque : il avait acquis la seigneurie de Terrebonne, et y faisait de grands travaux d'exploitation :[1] il y avait des moulins à farine et des scieries ; il en avait aussi à l'île Jésus.[2] C'était un des grands fournisseurs de bois de construction pour les vaisseaux de l'Etat :[3]

" Le sieur abbé Lepage, écrit M. Hocquart, a livré au commencement d'octobre les bordages et planches qu'il est tenu de fournir en exécution de son marché. . . . Il vient d'augmenter le moulin qu'il a fait construire sur sa terre, de deux nouvelles moulanges, de manière qu'il s'y en trouve quatre aujourd'hui, outre les deux roues à scie qui y sont. C'est le plus bel établissement de cette espèce qui soit dans la colonie."[4]

Il était lui-même constructeur de navires : " Je vous ai rendu compte de l'intelligence du sieur abbé Lepage pour de solides établissements en ce pays. Il m'a fait des propositions pour parvenir à construire des bâtiments de mer pour le compte du roi. . . ."[5]

M. Lepage entreprit même d'établir des forges, et forma à cet effet une société en opposition à celle de Saint-Maurice. Mais la cour l'arrêta dans cette entreprise. M. de Beauharnais écrivait à ce sujet au ministre :

" Cet ecclésiastique m'est venu représenter le tort considérable que lui faisait cette interruption, qu'il se voyait à la veille d'être réduit à la dernière misère,—et cela est véritable,[6]—après avoir bien travaillé pour l'augmentation de la colonie et avoir sacrifié ce qu'il avait, ses terres ayant été mises en décret pour 45 à 50,000 livres qu'il doit. Il y a lieu de craindre que les intéressés aux forges de Saint-Maurice ne sollicitent ses créanciers à le poursuivre, ou ne fassent l'acquisition de leurs créances. Pour lors, ses établissements, qui valent plus de 150,000 livres, seraient adjugés à vil prix, n'y ayant personne en ce pays en état de les acheter leur valeur."

M. de Beauharnais proposait que l'on permît à M. Lepage de continuer son établissement de forges, pourvu qu'il ne fît rien qui empêchât la société de Saint-Maurice de payer ce qu'elle devait à l'Etat :

" Pour ne donner aucune atteinte au remboursement des deniers de Sa Majesté, si vous jugez à propos d'accorder au sieur Lepage la permis-

[1] *Edits et Ordonnances*, t. III, p. 256.

[2] Histoire manuscrite du séminaire de Québec.

[3] En 1731, il obtient la permission " de faire exploiter, dans les seigneuries de Berthier et Dautray, 2,000 pieds cubes de bois de chêne, pour la construction d'une flûte de 500 tonneaux que le roi veut faire construire à Québec". (*Edits et Ordonnances*, t. III, p. 348.)

[4] Lettre de M. Hocquart au ministre, 12 octobre 1731.

[5] *Ibid.*, 25 octobre 1730.

[6] En 1745, il y avait " un nouveau seigneur à Terrebonne", M. de la Corne. (*Edits et Ordonnances*, t. III, p. 362.)

sion qu'il demande, vous pourrez lui défendre de vendre du fer dans la colonie, jusqu'au parfait paiement des deniers dus au roi, et de ne se servir d'aucun ouvrier des forges de Saint-Maurice. Pour lors, ils ne pourront se plaindre qu'on leur ôte les moyens de s'acquitter." [1]

On se demande qui administrait la paroisse de Terrebonne, pendant que le curé s'occupait ainsi de forges, de moulins, de construction de navires. L'évêque lui avait sans doute procuré un suppléant. Mais il n'en avait pas au chapitre de Québec, dont il faisait partie ; et M. Plante, un de ses confrères,[2] se lamentait :

"M. Lepage a sa terre et ses moulins à faire valoir ; M. Leclair a d'autres vues. Cependant, les chanoines ne remplissent pas leur bénéfice ; et le service divin en souffre. . . ." [3]

Aussi M. de Maurepas, écrivant un jour au gouverneur et à l'intendant du Canada, leur disait :

"Le roi a été informé que la plupart des chanoines du chapitre de Québec s'abstiennent du service, sous prétexte de maladie ou des voyages qu'ils font sans aucune nécessité, en sorte qu'ils ne sont jamais que trois au plus au chœur, et presque toujours les mêmes. Sa Majesté, qui a été malédifiée d'une pareille conduite,[4] m'a ordonné de vous écrire de leur expliquer de sa part d'être plus réguliers, à l'avenir, à remplir leurs devoirs."[5]

Le gouverneur et l'intendant transmirent à l'évêque ces recommandations de la cour ; puis ils répondirent au ministre l'année suivante :

" L'évêque a expliqué aux sieurs Lepage et Leclair qu'il fallait résider, ou se démettre de leurs canonicats, dont ils lui ont donné l'un et l'autre leur démission. Le premier s'y est porté de lui-même, et l'a assuré qu'aussitôt qu'il aura acquitté ses dettes, il ne s'occupera plus qu'aux fonctions ecclésiastiques." [6]

M. Leclair, l'émule de M. Lepage en fait d'entreprises et de travaux, était curé de Saint-Vallier ; mais il savait concilier ses occupations extérieures avec l'exercice de son ministère pastoral. Un document authentique nous atteste " son attachement bien connu pour ses paroissiens ".[7]

Il y avait aussi le chanoine Fornel, frère d'un marchand de Québec, et les deux abbés Hazeur, seigneurs de la Malbaie, qui se distinguaient par leur esprit de négoce et d'entreprise. Ceux-ci avaient même demandé

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[1] Lettre de Beauharnais au ministre, 28 octobre 1739.

[2] L'un des directeurs du séminaire de Québec.

[3] Documents de Paris, Eglise du Canada.

[4] On est porté à rire en songeant que celui qui était ainsi " malédifié " n'était autre que Louis XV.

[5] Lettre de M. de Maurepas à Beauharnais et Hocquart, 24 mai 1728.

[6] Documents de Paris, Eglise du Canada.

[7] Lettre de M. de Vaudreuil, dernier gouverneur français du Canada, communiquée à *l'Abeille* par M. l'abbé Blais, aujourd'hui évêque de Saint-Germain-de-Rimouski ; vol. XII, p. 60.

à la cour "le droit de traite et de chasse dans leur terre"; mais ce privilège leur fut refusé.[1]

Enfin, l'abbé Martin,[2] "desservant au Labrador", voulait fonder sur cette côte lointaine et désolée "un établissement pour la pêche du loup marin". Il avait envoyé un mémoire à la cour à ce sujet; mais le gouverneur et l'intendant du Canada paraissaient peu favorables à son projet:

"Nous ne pouvons répondre de suite, disaient-ils, au sujet de la demande du sieur Martin pour un établissement au Labrador.

"Cet endroit n'en paraît guère susceptible pour un homme de cette robe, n'y ayant que rochers en ce lieu: la dissipation que cause un établissement à conduire ne convient guère à un missionnaire.

"Ces propositions marquent de la bonne intention; nous croyons qu'il n'y a rien de plus. Mais les matières qu'il propose sont trop délicates pour ne vous pas demander le temps d'y répondre plus au long."[3]

Ils écrivaient de nouveau l'année suivante:

"Nous ne pouvons vous envoyer encore cette année les éclaircissements que vous attendez sur le mémoire du sieur Martin, prêtre, desservant à Labrador, concernant la concession qu'il a demandée, à cette côte, pour y faire la pêche du loup marin. Nous avons seulement été informés qu'entre la concession du sieur de Brouague[4] et celle de Constantin, il y a un espace de terre de douze lieues de longueur, qui ne sont point concédées. Si vous jugez à propos d'accorder la demande du sieur Martin, on pourra le placer dans cet endroit."

Nul doute que si bon nombre de prêtres canadiens se livraient ainsi à des entreprises plus ou moins incompatibles avec leur ministère sacerdotal, c'est qu'ils n'avaient pas de quoi vivre. On en a la preuve dans certains mémoires que les principaux curés du Canada adressèrent à la cour en 1730 et 1734, avec l'approbation de Mgr Dosquet, pour faire augmenter le taux de la dîme. Le prélat écrivait au ministre en 1730:

"Je lus hier à MM. de Beauharnais et Hocquart la requête que les curés du Canada ont l'honneur de vous présenter pour obtenir de percevoir les dîmes sur le pied qu'elles se perçoivent en France. Ils ont jugé comme moi que leur exposé est vrai, et que ce sera un grand avantage pour la colonie. . . ."

Les curés renouvelèrent leur demande en 1734, et écrivirent en même

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[1] Lettre de Vaudreuil et Begon au ministre, 12 novembre 1712.

[2] Encore un dont le nom ne se trouve pas dans le *Répertoire du Clergé canadien*.

[3] Lettre de Beauharnais et Dupuy au ministre, 20 octobre 1727.

[4] François Martel de Brouague, "propriétaire et commandant de la côte du Labrador". Il épousa, en secondes noces, le 15 septembre 1732, Louise-Madeleine Mariauchau-d'Esglis, sœur du huitième évêque de Québec. Leur fille Louise Martel de Brouague, qui se maria en 1753 au fils de l'ingénieur Chaussegros de Léry, est cette beauté dont parle Garneau, qui remplit, dit-on, d'admiration, le jeune roi Louis XVI, lorsqu'elle lui fut présentée un jour à Versailles. (*Dictionnaire généalogique* de Tanguay; Garneau, *Histoire du Canada*, t. II, p. 395.)

temps à Mgr Dosquet, qui venait d'arriver de France avec le titre d'évêque de Québec :

" Monseigneur, l'insigne faveur que le ciel vient de nous faire en nous rendant Votre Grandeur est une preuve incontestable de sa singulière protection sur nous : sans cette assurance si consolante, nous tomberions à coup sûr dans le dernier abattement.

" Les trois quarts de vos curés n'ont pas de quoi vivre : cela est vrai à la lettre. Nous vous en avions informé avant votre départ pour la France ; mais vos sollicitations pour nous à la cour n'ont rien opéré : le mal a même empiré par un autre endroit : les nouveaux ouvriers évangéliques [1] que vous avez amenés avec vous augmentent notre misère temporelle, prenant pour eux quelque partie d'une subsistance déjà insuffisante pour les anciens. Mais à quoi nous réduit-on ? Faut-il que nous paraissions nous plaindre de gens qui se sont arrachés généreusement aux douceurs de l'ancienne France, leur patrie, pour venir nous prêter la main dans un travail auquel nous ne pouvions fournir ?

" Quoi qu'il en soit, nous vous importunons aujourd'hui, monseigneur, encore une fois ; mais comme nous rougissons de parler si souvent le langage des mercenaires, c'est ici la dernière supplique qui vous sera présentée de notre part, et que nous renfermons dans une alternative :

" Ou que l'on ait la bonté de nous procurer le nécessaire, ce qui semble ne pouvoir se faire qu'en nous accordant la dîme sur le pied de la coutume de Paris, ou que l'on consente que, pour ne plus vivre aux dépens d'autrui, et ne pas mourir insolvables, nous nous fassions à nous-mêmes la violence d'abandonner nos missions, et allions chercher notre nécessaire ailleurs."

Cette lettre à Mgr Dosquet et le mémoire à la cour étaient signés par " Chartier de Lotbinière, archidiacre de Québec, Lyon de Saint-Féréol, curé de Québec, Levasseur, missionnaire de Lotbinière, Joseph Gaillard,[2] missionnaire à Berthier, Dupont, curé de Neuville, Le Boulanger, curé de Charlesbourg, Chardon, curé de Saint-Laurent, Nicolas Boucher,[3] curé de la paroisse de Saint-Jean-Baptiste, Augustin Mercier,[4] curé du Cap-la-Madeleine, Girard de Vorlay,[5] curé de la Sainte-Famille, Lelièvre, mission-

[1] Mgr Dosquet avait amené avec lui onze ecclésiastiques, qu'il voulait " entretenir jusqu'à ce qu'ils fussent prêtres" (Lettre au cardinal Fleury, Paris, 4 mai 1734) ; sans doute pour exécuter le projet dont j'ai parlé plus haut, " de mettre un curé français entre deux curés canadiens ".

[2] Fils du conseiller Gaillard, qui fut exilé sur ses terres de l'île d'Orléans par M de Beauharnais, durant la guerre du conseil contre le chapitre. Voir *Edits et Ordonnances*, t. III, p. 387.

[3] " Reconnu pour un saint prêtre ", écrivait de lui Mgr Dosquet. Il était fils de Pierre Boucher, et frère de Philippe.

[4] Il y avait deux frères Mercier, prêtres, l'un " l'aîné ", l'autre " le jeune ". Celui-ci était le jeune. Ils étaient fils de Louis Mercier, serrurier, de Québec, et petit-fils de Julien Mercier, venu de Tourouvre au Canada, l'ancêtre de feu Honoré Mercier, premier ministre de la province de Québec.

[5] M. Girard de Vorlay, " prêtre, chanoine de l'église cathédrale de Québec ", com-

naire de Saint-Pierre et Saint-Thomas, Denoyers, prêtre, Angers, missionnaire, Jacrau, prêtre de Lorette, Rouillard, curé de Saint-Nicolas, J. Chasle, curé de Beaumont, Deligmery, missionnaire de Champlain."

Mgr Dosquet, consulté par le ministre d'Etat sur la réponse à faire au mémoire des curés, écrivit :

"J'ai reçu votre lettre au sujet d'un mémoire présenté à la cour pour demander la permission de lever sur le champ la dîme de toutes sortes de grains. J'en ai conféré avec MM. de Beauharnais et Hocquart. Ils pensent que le temps n'est pas encore venu de faire ce changement. Mais ils sont persuadés qu'il est nécessaire d'avoir 2,000 livres de plus pour les suppléments, parce qu'ils se trouvent courts tous les ans, ce qui empêche l'établissement de nouvelles paroisses, et en même temps celui du pays.

"Il ne faut pas croire, monsieur, que plus nous irons en avant, moins il faudra de suppléments : au contraire, plus les paroisses se multiplieront, plus il faudra les augmenter, jusqu'à ce que le pays soit bien établi. Il y a même des paroisses qui autrefois n'avaient pas de supplément, et qui en ont grand besoin aujourd'hui, comme Lachine, Batiscan, Champlain, etc., et cela, ou parce que les terres ne valent rien et sont usées, ou parce qu'au lieu de bled on y fait venir le chanvre et le tabac.

"A en juger par la France, on pensera qu'il faut peu pour faire subsister un curé de campagne. Il leur faut ici au moins 800 francs pour vivre. Un missionnaire ne peut se passer d'un cheval, ni d'un valet pour en prendre soin et pour faire la cuisine. Les fourrages et les hommes sont chers ; les habits coûtent ici le double ; il leur en faut plus qu'ailleurs à cause des grands froids ; s'ils tombent malades, il en coûte beaucoup pour les remèdes ; et ainsi de suite. Toutes ces raisons m'avaient porté à croire qu'il était à propos d'augmenter les dîmes, afin que la cour pût dans quelques années retrancher une partie de ce qu'elle donne pour leur subsistance. . . ."

On temporisa cependant et en France et au Canada. Rien ne fut changé par rapport au taux et au mode de perception de la dîme[1] : elle resta sur le pied où l'avaient mise Mgr de Laval et M. de Tracy (1667) ; et elle y est encore.

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paraît un jour (1715) au Conseil supérieur comme "procureur de M. René Boullay, seigneur de la Roche Saint-Jean, conseiller et procureur du roi aux eaux et forêts de la ville de Loches, syndic des pères capucins de Loches, légataire par forme d'aumône de défunte dame Hazeur". Cette dame Hazeur (Elisabeth Barbe), originaire de Loches, avait légué aux capucins de cette ville une aumône de 300 livres. Son gendre, le Dr Sarrazin, voulait bien s'acquitter et leur payer cette somme, mais en monnaie de cartes : eux exigeaient de la monnaie de France ; ils furent déboutés de leur demande.

[1] "Sa Majesté n'a pas jugé à propos de rien changer à ce qui se pratique au Canada par rapport aux dîmes, et il est inutile d'en parler davantage." (Lettre de M. de Maurepas à Beauharnais et Hocquart, Versailles, 11 mai 1728.)

L'archidiacre Chartier de Lotbinière, dont le nom figure le premier au bas du mémoire cité tout à l'heure, était le personnage ecclésiastique le plus en vue après l'évêque et le grand vicaire. On peut même dire qu'il les éclipsait un peu par l'éclat de son nom, ses alliances de famille, sa popularité et ses états de service au Canada.

Il appartenait à une famille de robe, son père, René-Louis, ayant été lieutenant général civil et criminel, à Québec, son grand-père, Louis-Théandre,[1] lieutenant général de la prévôté. Il n'était pas encore en âge de majorité, lorsqu'il fut nommé par le roi conseiller au conseil supérieur.[2] Il entra au conseil le lundi 13 avril 1711, "avec voix consultative seulement, attendu sa minorité, sans y avoir voix délibérative";[3] et le lendemain même il épousait à Québec Marie-Françoise Renaud-Davenne des Meloises, qui lui donna plusieurs enfants.

Devenu veuf, le 25 avril 1723, il embrassa l'état ecclésiastique, fit sa théologie au séminaire de Québec, et fut ordonné par Mgr de Saint-Vallier le 14 avril 1726, quinze ans jour pour jour après son mariage.

C'était un homme d'un caractère élevé, jouissant de l'estime et de la confiance générales. Homme du monde, à la fois, et homme d'église, il faisait honneur à son ancienne et à sa nouvelle profession. Aussi Mgr de Saint-Vallier n'hésita-t-il pas à lui confier les fonctions importantes de grand vicaire et d'archidiacre six mois seulement après son ordination.[4] Il l'eût même nommé doyen du chapitre, n'eût été son titre de "Canadien". Ecoutons plutôt le prélat :

"M. de Lotbinière, dit-il, conseiller du conseil supérieur de Québec, plein de vertu et de mérite, ayant pris le parti de se faire prêtre, je lui ai donné la dignité d'archidiacre, que feu M. de Varennes[5] possédait. Il mériterait mieux qu'un autre la dignité de doyen ;[6] mais selon les lumières de M. Begon,[7] qui nous quitte, et selon les miennes, il ne faudrait point ici de doyen canadien, pour plusieurs raisons importantes, qui cessent cependant si l'on n'en trouve point d'un mérite qui veuille venir. Ainsi mon dit sieur de Lotbinière l'emportant sur tous par ses excellentes

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[1] C'est chez lui, à Québec, rue Saint-Louis, qu'eut lieu, le 4 février 1667, le premier bal donné au Canada. (*Journal* des jésuites.)

[2] Sa commission était datée du 5 mai 1710.

[3] *Jugements du Conseil supérieur*, t. VI, pp. 201, 209.

[4] Mgr de Saint-Vallier avait d'autant plus d'estime pour M. de Lotbinière, que le sacrifice qu'il avait fait en quittant le monde lui rappelait celui de son propre aïeul, qui, lui aussi, devenu veuf, avait embrassé la carrière ecclésiastique, et était devenu évêque de Grenoble.

[5] J.-Bte Gauthier de Varennes, fils de René, gouverneur de Trois-Rivières, frère du célèbre Gauthier de la Vérendrye, qui fit la découverte des montagnes Rocheuses en 1743, et petit-fils de Pierre Boucher ; grand archidiacre et vicaire général de Québec ; décédé le 30 mars 1726. Il était en 1712 procureur du séminaire de Québec. (*Jugements du Conseil supérieur*, t. VI, p. 374.)

[6] Cette dignité était vacante depuis la mort de M. Glandelet en juin 1725.

[7] Michel Begon, intendant du Canada de 1712 à 1726.

qualités et expérience, doit être choisi préférablement aux autres. Je l'ai fait mon grand vicaire à cause des grands services qu'il rend à ce diocèse. . . ."

M. de Latour s'étant démis de son doyenné en 1733, le gouverneur et l'intendant proposèrent, en effet, à la cour de lui donner pour successeur M. de Lotbinière :

" Vous savez, écrivaient-ils au ministre, qu'il est des meilleures familles de ce pays. Il a cinq enfants à élever, et les services qu'il rend depuis vingt-trois ans dans le Conseil supérieur parlent en sa faveur. M. de Samos et nous ne pouvons vous rendre que les témoignages les plus avantageux de sa conduite et de sa régularité."

Ce ne fut cependant qu'en 1738 que M. de Lotbinière fut promu au doyenné du chapitre : il en prit possession le 4 septembre et le garda jusqu'à sa mort en 1749.

En entrant dans l'état ecclésiastique, il n'avait pas cessé pour cela de faire partie du conseil ;[1] il y fut toujours un des plus assidus, comme il en était un des plus compétents. Il devint en 1738 doyen des conseillers, chargé par conséquent de présider l'assemblée, de recueillir les suffrages et de prononcer les arrêts, en l'absence de l'intendant. Comme il était instruit et laborieux, c'est à lui qu'il incombait souvent d'être rapporteur dans les différentes causes, ce qui lui donnait un surcroît d'ouvrage entre les séances.

Accablé de travaux, il était cependant un des plus assidus au chœur. Mais, malgré sa bonne volonté, il ne pouvait assister au chœur et au Conseil en même temps. S'il manquait l'office, ses confrères chanoines, jaloux peut-être de ses dignités et de son importance, le marquaient absent, afin de lui retrancher une partie de ses émoluments. Il fut obligé de s'en plaindre au gouverneur, d'abord, puis à la cour :

" M. de Lotbinière nous a dit, écrit M. de Beauharnais au ministre, qu'il vous ferait des représentations sur ce qui se pratique dans le chapitre de Québec à son égard. Il est piqué pour ses absences du chœur toutes les fois qu'il est obligé de venir au conseil, ce qui le prive d'une partie du revenu de son bénéfice. Il est vrai qu'en France les conseillers-clercs des cours souveraines, et qui sont chanoines, jouissent du revenu de leurs prébendes, sans qu'ils soient tenus de l'assistance à l'office. Le sieur de Lotbinière n'est pas cependant tout à fait dans ce cas, quoiqu'il soit ecclésiastique, sa commission de conseiller ayant resté la même depuis qu'il a changé d'état. . . ."

Voici d'ailleurs ce que M. de Lotbinière écrivit lui-même à ce sujet à M. de Maurepas, ministre et secrétaire d'Etat : ces documents nous font saisir sur le vif les mœurs de l'époque :

" Eustache Chartier de Lotbinière, doyen du chapitre de Québec, et

[1] Il pouvait donc arriver qu'il y eût trois ecclésiastiques présents au conseil : l'évêque, qui en faisait partie de droit, le conseiller-clerc, et M. de Lotbinière.

conseiller du conseil supérieur, a l'honneur de représenter à Votre Grandeur que depuis trois ans le chapitre de Québec lui fait perdre plus de 60 livres de son revenu, pour les absences dont il est piqué, lorsqu'il assiste au conseil pour y rendre la justice. Il est vrai que le dit sieur de Lotbinière est un des plus assidus au chœur pour y chanter ou pour y réciter l'office, tous les chanoines en conviennent. Cependant, à la fin de l'année, quand il s'agit de partager le revenu du chapitre, il se trouve que le dit sieur de Lotbinière est un des plus piqués, et que, quoique les chanoines connaissent parfaitement que cela ne devrait point être, puisqu'il est un de ceux qui assistent le plus scrupuleusement aux heures de l'office du matin, cependant ils ne veulent point le passer comme présent, lorsqu'il va au conseil.

" Le sieur de Lotbinière, qui demandait ci-devant à Votre Grandeur la grâce qu'elle a eu la bonté de lui accorder, cette année, n'a pas voulu l'interrompre pour lui rendre justice sur ce fait ; mais comme il est aujourd'hui doyen du chapitre, ses absences se voient très fortes, ce qui lui ferait perdre l'augmentation du revenu qu'il doit avoir en possédant ce bénéfice, puisque les piqures sont du double, ayant double portion du chapitre en qualité de doyen.

" Il a l'honneur de vous représenter, monseigneur, que le doyenné ne lui donnera pas plus de 300 livres d'augmentation, quand même il ne serait pas piqué lorsqu'il va au conseil, parce que M. l'évêque lui donnait, étant archidiacre, 200 livres tous les ans pour ses visites, qui, jointes au revenu de l'archidiacre, faisait, à 300 livres près, ce qu'il pourra recevoir dans la suite comme doyen ; et s'il était piqué toutes les fois qu'il assistera au conseil, les piqures iraient, en qualité de Doyen, à près de 300 livres, qui est la même somme qu'il reçoit en qualité de conseiller au dit conseil supérieur, et que la grâce que Votre Grandeur lui vient d'accorder ne le mettrait pas plus en état de se soutenir et sa famille.

" C'est pour cela qu'il a l'honneur de vous représenter, monseigneur, qu'il y a vingt-huit ans qu'il est conseiller au dit conseil supérieur ; qu'il en a passé sept sans recevoir d'appointements,[1] pendant lesquels il a travaillé comme il fait aujourd'hui.

" D'ailleurs, il peut dire, sans craindre d'être accusé de présomption, que s'il y a quelques affaires un peu difficiles et embarrassantes à rapporter au conseil, M. l'intendant lui fait l'honneur de le prier de s'en charger, soit qu'il le juge plus en état de le faire qu'un autre, étant le doyen des conseillers, soit qu'il pense que le dit sieur de Lotbinière se fait un devoir de ne pas laisser languir les parties, et de les faire juger le plus promptement qu'il lui est possible. Cependant, si en travaillant à l'ordinaire aux affaires du public, le chapitre le pique comme il a fait ci devant, il n'aura que l'honneur d'être doyen du chapitre, et il sera piqué de la

[1] D'après cela, ce serait en 1718 que les conseillers auraient commencé à recevoir un traitement : ce traitement était de 300 livres.

plus grande partie des fruits attachés à cette dignité, puisqu'il perdra par ses absences au chapitre, en travaillant gratis pour le public, ce que le roi lui donne au conseil pour appointements. Cela paraît d'autant plus injuste que le chapitre sait parfaitement que le conseil supérieur rend la justice sans prendre aucuns émoluments pour les vacations et conseils extraordinaires.

"D'ailleurs tous les casuistes sont d'accord que le prébendier qui est absent pour les affaires publiques est censé présent au chœur, et doit être payé comme s'il l'était en effet. Cependant jusqu'à présent le chapitre m'a fait perdre tous les ans mes absences, lorsque j'ai été occupé aux affaires du public, soit en assistant au conseil, soit en travaillant gratuitement chez moi pour faire rendre justice aux particuliers qui ont des procès.

"Le dit sieur de Lotbinière ose espérer, monseigneur, que Votre Grandeur voudra bien ordonner qu'il sera censé présent et payé comme tel au chapitre, les jours qu'il ira au conseil, et travaillera aux affaires du public, d'autant plus que le revenu du chapitre est presque tout composé des bienfaits de Sa Majesté,[1] recevant peu de chose de l'abbaye de Maubec.—Québec, le 16 octobre 1738."

En plusieurs occasions, M. de Lotbinière joua un rôle important dans nos affaires ecclésiastiques. Deux fois, il prit possession du siège épiscopal, comme procureur des évêques absents, une première fois en 1728, au nom de Mgr de Mornay, une deuxième fois en 1734, au nom de Mgr Dosquet. Plusieurs années de suite, durant l'épiscopat de ce prélat, il eut à faire la visite du diocèse, en qualité d'archidiacre. Mais l'événement principal auquel il attacha son nom, ce fut la sépulture de Mgr de Saint-Vallier.

En sa qualité d'archidiacre, il prétendait que c'était à lui à présider aux funérailles du prélat, non seulement à l'hôpital général, où il était décédé et devait être enterré, mais à la cathédrale et dans les églises de la ville où le cercueil, porté processionnellement, devait entrer : et il semble que, d'après les anciennes prérogatives des archidiacres, il avait raison. Or, voici que les chanoines, ses confrères, dans leur assemblée du 31 décembre 1727, lui contestent ce privilège, et décident que le service à la cathédrale sera chanté par le vicaire capitulaire, M. Boulard. Il en appelle au conseil ; mais le chapitre récuse cette autorité.

De son côté, l'intendant Dupuy, exécuteur testamentaire du défunt, est informé que l'on veut inhumer ses restes mortels à la cathédrale, malgré sa volonté expresse d'être enterré à l'hôpital général. Pour éviter de pénibles altercations, tous deux s'entendent pour procéder à la sépulture sans cérémonie et sans bruit, le soir, dans l'église paroissiale de

[1] Le roi donnait au chapitre 3,000 livres par année, "à prendre sur son domaine de la Nouvelle-France". (*Edits et Ordonnances*, t. I, p. 339.)—Mgr de Saint-Vallier écrivait le 9 octobre 1727 : "Je vois peu de corps plus à son aise que ce chapitre, quoiqu'ils aient voulu écrire et persuader le contraire." (Documents de Paris, Eglise du Canada.)

l'hôpital général : l'archidiacre remplit les fonctions auxquelles il prétend avoir droit ; l'intendant exécute les volontés formelles du défunt, qui a préparé lui-même son caveau funéraire à l'hôpital. On aime à supposer que tous deux crurent avoir de fortes et sérieuses raisons d'agir comme ils l'ont fait.

Leur conduite par rapport à la question de juridiction, après la mort de Mgr de Saint-Vallier, est plus grave. Si nous la jugeons d'après les idées reçues et admises aujourd'hui par tout le monde, elle est inexplicable. Sans doute le siège épiscopal de Québec n'était pas réellement vacant : le coadjuteur *cum futurâ successione*, Mgr de Mornay, qui vivait en France, était devenu évêque de Québec, même sans s'en douter, à la mort du prélat défunt. Mais savait-on et pouvait-on savoir, à cette saison de l'année, à Québec, que lui-même était vivant ? Il y avait quasi-vacance, c'est-à-dire qu'il était physiquement impossible que l'évêque titulaire pût être averti, venir prendre possession de son siège, et administrer son diocèse. Il est admis aujourd'hui, du reste, que les grands vicaires de l'évêque défunt avaient perdu leurs pouvoirs par le fait de son décès. C'était donc au chapitre à nommer un vicaire capitulaire qui prît les rênes du pouvoir d'une manière provisoire : et c'est ce qui fut fait.

Mais à l'époque dont nous parlons ce droit n'était pas reconnu par tout le monde. Les parlementaires et les gallicans—Dupuy était de cette école—n'admettaient pas que les prescriptions disciplinaires du concile de Trente fissent loi dans l'Eglise de France. Ils en étaient encore à l'ancienne discipline, d'après laquelle les archidiacres avaient de très grands pouvoirs, qui ne cessaient pas à la mort de l'évêque. M. de Lotbinière avait été lui-même élevé dans ces idées. Grand archidiacre de l'Eglise de Québec, grand vicaire de Mgr de Saint-Vallier, il ne croyait pas avoir perdu ses pouvoirs par la mort du prélat ; il se regardait comme le représentant et le dépositaire de l'autorité ecclésiastique en attendant que le chef de l'Eglise pût venir la gouverner lui-même : Mgr de Mornay était censé lui conférer au besoin toutes les facultés. Le chapitre, d'ailleurs, n'avait aucun droit de se poser comme le représentant de l'autorité, puisque son existence même était en question ; son organisation canonique était tout à fait irrégulière, les chanoines n'ayant pas voulu accepter la bulle pontificale de Clément XI qui avait réformé leur compagnie.[1]

Dupuy allait plus loin : homme très retors, tout dévoué aux maximes gallicanes, il prétendait qu'en cas de conflit au sujet du représentant de l'autorité légitime, c'était à l'Etat à trancher la question : "L'Eglise, disait il, n'est qu'une dépendance et un rouage de l'Etat. Elle est

[1] Voir *Henri de Bernières*, p. 154.—"Il ne paraît pas que le chapitre de Québec ait encore tout ce qui lui est nécessaire pour exercer les droits des églises cathédrales ; il n'a encore ni bulles, ni lettres patentes en forme. Celle de Clément X . . . a été révoquée par une de Clément XI . . ., à quoi le chapitre s'est opposé. . . . Le chapitre est encore dans le *combat des bulles*. . . ." (Mémoire de Mgr Dosquet, 1730.)

dans l'Etat, et non l'Etat dans l'Eglise; elle fait partie de l'Etat, sans lequel elle ne peut subsister."[1] Dans le cas actuel, c'était donc à lui et au conseil supérieur à maintenir M. de Lotbinière comme archidiacre et administrateur du diocèse, durant la vacance du siège, ou plutôt en l'absence de l'évêque. Il n'eut pas de peine à entraîner à ses opinions la majorité des conseillers; et ceux-ci se mirent à rendre des arrêts contre le chapitre et le vicaire capitulaire. De son côté, l'intendant faisait des ordonnances : arrêts et ordonnances étaient publiés dans les côtes par les capitaines de milice ; et lorsque le gouverneur, en sa qualité de chef militaire de la colonie, eut défendu à ceux-ci d'intervenir, Dupuy leur adjoignit les maîtres d'école, qui étaient sous sa juridiction, et leur adressa ses ordonnances "pour en faire lecture au peuple".[2] C'est probablement le premier cas d'intervention—forcée, il est vrai—des instituteurs dans la politique . . . .

La guerre faite au chapitre par le conseil et l'intendant dura plusieurs mois, jusqu'à ce que le gouverneur y mit fin, à la manière de Frontenac, par un acte d'autorité.

On a prétendu, mais sans raison, que les jésuites avaient soutenu l'intendant dans ce conflit. Ce qui donna lieu, sans doute, à ce sentiment, c'est qu'ils ne se gênèrent pas, et bien d'autres avec eux, de blâmer certains actes de rigueur excessive, et de véritables injustices commises par le chapitre, comme par exemple, l'interdiction de l'église et des religieuses de l'hôpital général, la persécution exercée contre les ursulines à cause de leurs directeurs.

Laissons la sœur Duplessis, de l'Hôtel-Dieu, nous dépeindre la situation où se trouva l'Eglise de Québec durant les longs mois qui suivirent la mort de Mgr de Saint-Vallier :

"Nous avons vu une guerre ouverte entre le chapitre et le conseil. Il y eut plusieurs arrêts rendus, des conseillers exilés[3] par notre gouverneur, qui ont été rétablis, cette année, par ordre de la cour.

"Les chanoines, se croyant maîtres absolus, firent tant de changements, surtout dans les maisons religieuses, que les ursulines eurent recours au conseil, pour implorer la protection du roi contre les menaces qu'on leur faisait. On avait déjà interdit leur confesseur, et on les avait traitées fort durement dans leurs propres chaires, sur ce qu'elles avaient dit que leur communauté avait toujours été plus paisible quand elles avaient eu des confesseurs jésuites que lorsqu'elles avaient eu des prêtres (séculiers).

"Cette parole a tellement choqué ces messieurs, qu'ils ont cru le clergé flétri et déshonoré. Ils ont exercé contre ces bonnes filles tout ce

[1] *Edits et Ordonnances*, t. II, p. 327.

[2] *Ibid.*, p. 333.

[3] Il y en eut deux, Guillaume Gaillard, et Louis Rouer d'Artigny. Celui-ci était fils de l'ancien conseiller Rouer de Villeray, qui avait toujours été du "parti jésuite".

qu'ils ont pensé qui pouvait les mortifier. Ils ont empêché les sept discrètes de communier et de se confesser toute l'année, n'ayant donné à personne le droit de les absoudre. Elles n'ont fait ni pâques, ni jubilé ; elles se sont vues à la veille d'être excommuniées. On leur a fait deux monitions ; mais heureusement pour elles il vint en ce temps-là des nouvelles de France, par l'Angleterre, qui apprirent que la conduite violente des chanoines était désapprouvée par la cour. Cela les arrêta un peu. Ils n'ont pas laissé de harceler toujours cette maison, qui n'a été calmée qu'à l'arrivée de Mgr l'évêque. . . .[1] D'autres communautés ont aussi été tourmentées de ces messieurs. . . ."[2]

A vrai dire, il est rare que, dans ces temps de troubles et de passions, tout le monde ne se mette pas un peu dans le tort. M. de Beauharnais lui-même, qui fut alors le sauveur de la situation, outrepassa certainement ses pouvoirs, surtout en exilant temporairement deux conseillers à la campagne, pour s'assurer d'une majorité au conseil : il agit à ses risques et périls, et fut blâmé par la cour. Mais il s'en consola facilement, parce qu'il était convaincu que son intervention avait été bienfaisante et approuvée par tous les hommes sages de la colonie.

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Le marquis Charles de Beauharnais, gouverneur du Canada, qui fit les honneurs du château Saint-Louis avec tant de grâce et de magnificence lors des fêtes en l'honneur du Dauphin, en 1730, était arrivé au pays dans l'été de 1726. Sa commission, datée de Marly, est du 11 janvier de cette année : M. de Beauharnais y est qualifié de "capitaine de vaisseau". Il fut gouverneur du Canada jusqu'en 1747 : lui et son prédécesseur, M. de Vaudreuil, sont les deux gouverneurs, sous l'ancien régime, qui sont restés le plus longtemps, sans interruption, à la tête des affaires : leurs deux administrations couvrent une période de quarante-quatre ans, de 1703 à 1747.

Charles de Beauharnais était frère de François de Beauharnais, qui avait été intendant du Canada quelques années auparavant. Or M. Tremblay, du séminaire des Missions-Etrangères de Paris, écrivant à un de ses confrères de Québec au sujet de cet intendant, lui disait : "Il est d'une famille qui n'est pas jésuite, car madame sa mère est la grande dévote de l'Oratoire, à Orléans." C'est peut-être parce que Charles de Beauharnais ne passait pas pour "ami des jésuites", qu'on a supposé que ceux-ci avaient pris le parti de l'intendant Dupuy dans ses luttes contre le chapitre.[3]

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[1] "Selon leur coutume, nos mères avaient enregistré tous les événements de cette époque ; mais d'après le désir de Mgr Dosquet, elles consentirent à retrancher ces pages de leurs Annales." (*Les Ursulines de Québec*, t. II, p. 144.)

[2] Lettre de la sœur Duplessis, Hôtel-Dieu de Québec, 25 octobre 1729.

[3] Il se trouvait, d'ailleurs, que le jésuite Dupuy, fils de l'intendant, était à cette époque à la maison de Québec.

"Sage, courageux et habile, écrit l'abbé Ferland, ce gouverneur avait épousé une dame veuve déjà avancée en âge, dont il n'avait pas eu d'enfants. Il réunissait donc plusieurs des qualités qui avaient été signalées comme nécessaires à un gouverneur du Canada."

"Il appartenait, dit Garneau, par sa mère à une famille que ses services et sa parenté avec les Pontchartrain avaient placé dans les plus hauts emplois de la marine et des colonies."

Il était grand-oncle d'Alexandre de Beauharnais, premier mari de l'impératrice Joséphine, Joséphine Tascher, épouse de Napoléon Ier, qui la répudia pour épouser Marie-Louise d'Autriche. Par une coïncidence singulière,—je crois, du moins, qu'il n'y eut que coïncidence,—en même temps que le marquis de Beauharnais quittait la France pour venir prendre possession de son gouvernement du Canada, Gaspard-Joseph Tascher, grand-père de Joséphine, s'expatriait, lui aussi, pour aller s'établir aux Antilles françaises :

"Les Tascher, dit un chroniqueur, étaient des gentilshommes du Blésois, qui dépensaient, depuis des générations, leur sang et leur maigres revenus au service du roi, quand, en 1726, l'un d'eux, Gaspard-Joseph, prit le parti d'aller chercher fortune "aux îles", comme on disait alors, et s'embarqua pour la Martinique : c'était le grand-père de Joséphine. . . .

"Laissant aux émigrants d'esprit tenace et d'âme austère les forêts glacées et les grands fleuves du Canada, le flot des jeunes gentilshommes était attiré sous les tropiques par les perspectives de prompte richesse, la séduction du climat, les raffinements de l'extrême civilisation joints à ce laisser-aller des mœurs que l'esclavage entraîne inévitablement avec lui. Au bout de deux ou trois générations, c'étaient des créoles que l'on voyait réapparaître à Versailles, plus opulents que les fermiers généraux, plus élégants, plus spirituels, plus dissolus aussi que les courtisans les mieux en renom."

Le fils aîné de Gaspard-Joseph possédait "la plantation des Trois-Ilets" ; et c'est "dans le bâtiment de la sucrerie" que naquit et grandit Joséphine.

Sur ces entrefaites, un neveu du gouverneur du Canada, un autre marquis de Beauharnais, était devenu gouverneur des Antilles françaises. Son gouvernement ne fut pas heureux : il laissa les Anglais s'emparer de la Guadeloupe. Il fut destitué et rentra en France, emmenant avec lui sa maîtresse, la tante de Joséphine. Cette femme rêva alors d'associer les Tascher à son opulence ; elle réussit à conclure un mariage entre le fils du marquis, Alexandre de Beauharnais, et sa nièce. Joséphine passa en France, et épousa en 1779, à Paris, le jeune de Beauharnais. L'union fut éphémère. Au bout de quatre ans, notre créole demanda et obtint légalement séparation d'avec son mari. Ainsi se termina par un divorce l'alliance de Joséphine avec Beauharnais, comme ce fut par un autre

divorce—celui-là bien cruel et amer—que prit fin son union, autrement plus glorieuse encore, avec le grand Napoléon.[1]

Je reviens à notre gouverneur.

Homme de paix, comme tous les militaires de grande valeur, il était à la fois doux, conciliant et ferme : son caractère se révèle tout entier dans le discours qu'il prononça, ou plutôt qu'il fit lire par son secrétaire,[2] au conseil, dans la séance du 8 mars 1728, pour mettre fin aux empiètements de ce tribunal dans les affaires ecclésiastiques. Je cite ici cette pièce, qui, je crois, n'a pas encore été publiée :

"Nous avons vu, messieurs, avec un extrême déplaisir ce qui s'est passé en cette colonie depuis la perte qu'elle a faite de M. l'évêque de Québec. Nous avons été très surpris d'apprendre par des voies indirectes que le conseil supérieur de cette ville se fût attribué le droit de connaître et décider souverainement de matières d'autant plus délicates et dangereuses qu'elles intéressent tout le corps ecclésiastique de ce pays, sans avoir su de nous, qui occupons pour le roi la première place de cette compagnie, quel est notre sentiment sur la conduite qu'elle avait à tenir, et sur les mesures qu'il convenait prendre dans une affaire de cette importance.

"Le conseil ne peut ignorer les ordres de Sa Majesté, qui y ont été enregistrés, par lesquels il lui est défendu de faire aucuns règlements généraux qu'en présence du gouverneur et de l'intendant. Nous avions lieu de nous flatter que dans des matières aussi importantes et aussi extraordinaires que le sont celles dont il est question, il n'aurait pas pris des résolutions aussi vives que celles qu'il a prises, sans nous avoir auparavant demandé notre avis.

"Nous espérions aussi que cette compagnie, informée du mauvais effet que ses arrêts multipliés faisaient dans tous les esprits, se porterait à cesser ses poursuites, et à attendre la décision de Sa Majesté sur des matières aussi douteuses et aussi contestées, ainsi que le conseil supérieur a fait, du temps de nos prédécesseurs, dans des affaires moins importantes et moins délicates.

"Cette compagnie si sage, si soumise aux ordres du roi, voudrait-elle aujourd'hui les ignorer, pour nous ôter la connaissance du parti qu'elle a pris de continuer ses procédures, et de soutenir un ouvrage qu'elle se repent peut-être d'avoir commencé ?

"Enfin, nous apprenons que lundi dernier, premier de ce mois, elle a rendu un arrêt contre le sieur Boulard, curé de Québec, que le chapitre de cette ville a nommé vicaire général de ce diocèse, et que cet arrêt, qui

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[1] *La Légende de Joséphine*, par M. de Lanzac de Laborie, dans le *Correspondant* du 10 février 1899, p. 475.

[2] D'Ailleboût des Musseaux. Il avait un frère ecclésiastique, que je vois marqué à 102 livres, dans la liste de "Distribution des grâces du roi" pour 1730. J'y vois aussi deux autres ecclésiastiques, l'abbé Martel, 73 livres, l'abbé de Falaise, 201.

ne tend pas moins qu'à attenter à la personne du sieur Boulard, jette un trouble général dans la colonie, et y excite des murmures dont nous ne sentons que trop les dangereuses conséquences. Et comme il est de notre devoir de prévenir les suites fâcheuses qui peuvent s'en suivre, et d'employer à cet effet toute l'autorité qu'il a plu à Sa Majesté de nous confier, pour arrêter le cours d'une procédure si contraire au repos public et au bien de la colonie, nous défendons de la part du roi aux officiers du conseil supérieur de Québec de recevoir dès à présent aucune requête ou réquisitoire, ni aucunes réponses de la part des parties citées, et de rendre directement ou indirectement aucun arrêt sur les matières en question ; et nous suspendons, de la même autorité, l'exécution de toutes ordonnances ou arrêts ci-devant rendus sur cette matière, jusqu'à ce qu'il ait plu à Sa Majesté d'en ordonner. Défendons pareillement au greffier d'en écrire et expédier, et aux huissiers, archers, ou autres, d'en signifier, publier, ni afficher aucuns de ceux qui ont été ci-devant rendus à ce sujet, sous peine de désobéissance.

" Nous imposons silence sur toutes ces matières au sieur de Lanouiller, conseiller, faisant les fonctions de procureur général depuis le décès du sieur Collet, jusqu'à ce qu'il ait plu à Sa Majesté de faire savoir ses intentions sur le tout.

" Voulons que notre présent ordre soit porté au conseil supérieur au premier jour d'assemblée, pour y être lu par un de nos secrétaires, à haute et intelligible voix, et ensuite publié à son de tambour [1], et affiché en tous lieux où besoin sera, tant dans cette ville qu'en celles des Trois-Rivières et de Montréal, et partout ailleurs où nous le jugerons nécessaire, à ce que personne ne prétende cause d'ignorance."

On remarque que, dans ce discours, le gouverneur ne nomme pas une seule fois l'intendant ; il ne s'adresse directement qu'au conseil. C'était faire preuve de beaucoup de tact : il était important que les deux représentants de l'autorité royale au Canada ne parussent pas divisés entre eux.

L'intendant Dupuy n'avait pas ce tact ; et l'on ne saurait s'imaginer combien le gouverneur eut à souffrir de ses prétentions excessives durant les deux années qu'il eut à passer avec lui. Il ne s'en plaignait cependant qu'à la cour :

" Il n'est pas trop aisé, écrit-il un jour, de pouvoir vivre avec un homme d'une hauteur qui passe l'imagination . . . . C'est un homme absolument hors de sa sphère. . . ."

" Je suis bien fâché, écrit-il encore, que M. Dupuy me donne si souvent occasion de vous faire des plaintes contre lui. . . . La trop grande facilité qu'il a d'écouter tous les discours que ses prétendus amis lui tiennent, et qu'il croit comme articles de foi, fait qu'il est le jouet de tous les mauvais

[1] L'ordre de Beauharnais fut en effet publié " au son des tambours des troupes ", et aux acclamations de " Vive le roi ! Vive Beauharnois ! " (*Edits et Ordonnances*, p. 331.)

esprits du pays. . . . Si je suivais pied à pied M. Dupuy sur tout ce qu'il entreprend, je n'en finirais jamais. Ce serait dissensions continuelles. . . ."

Il ajoute encore une autre fois : "M. Dupuy fait en ce pays-ci le général, l'évêque et l'intendant. Il en donne tous les jours des preuves. . . . Il n'y a personne qui n'y perde son latin. C'est un homme impraticable, si jamais il y en a eu un. Il suffit que je dise blanc pour qu'il dise noir. . . ."

M. de Beauharnais se sentit soulagé, lorsque la cour rappela Dupuy dans l'été de 1728. Il écrivit le 9 octobre au ministre : "Je ne saurais que très imparfaitement vous exprimer le service important que vous avez rendu à toute la colonie par la révocation de M. Dupuy."

Dupuy fut remplacé par M. Hocquart, qui exerça les fonctions d'intendant jusqu'en 1748, c'est-à-dire tout le temps de l'administration de M. de Beauharnais. Alors commença une ère de paix et d'entente entre les autorités coloniales qui avait été presque inouïe jusque-là. M. Hocquart écrivait en 1730 :

"La paix et la tranquillité règnent ici plus qu'elles n'y ont jamais été. L'intelligence est parfaite entre M. le général, M. l'évêque et moi, et nous sommes persuadés qu'elle est nécessaire pour l'intérêt du roi et celui de la colonie."

Quelques mois plus tard, le gouverneur s'associait à l'intendant pour dire à la cour les bons effets de l'union qui existait entre eux :

"Nous avons toujours concouru, autant qu'il a dépendu de nous, à entretenir la paix et l'union dans tous les corps de la colonie, et nous avons pris toutes les voies de conciliation pour étouffer les semences d'animosité et de division. Nous avons la satisfaction de voir que la paix et la tranquillité règnent dans tous les états séculiers."

La supérieure de l'hôpital général faisait un jour l'éloge de l'esprit de conciliation de M. de Beauharnais :

"Notre communauté, disait-elle, a eu beaucoup à souffrir, depuis le décès de Mgr de Saint-Vallier, des contradictions et des interdits sans droit et sans cause que des personnes mal disposées injustement contre feu Mgr de Saint-Vallier nous ont suscités pour détruire, s'il leur avait été possible, son ouvrage.

"Cette communauté, affligée au delà de toute expression, a eu le bonheur que M. de Beauharnais, comme un bon père plein de charité, s'est donné toutes les peines imaginables pour faire cesser ces troubles, et pour donner la tranquillité à cette maison, que ces intrigues avaient désunie, en révoltant cinq de nos religieuses et en les autorisant dans la désobéissance à leur supérieure. . . ."[1]

Le gouverneur et l'intendant s'efforçaient aussi de rétablir l'union

[1] Lettre de la sœur Saint-Augustin, supérieure de l'hôpital général, au ministre Quebec, 4 novembre 1728.

dans le clergé ; mais ils rencontraient souvent plus d'un obstacle.[1] Ecrivant au ministre en 1733 :

"De nouvelles représentations, disaient-ils, ont été faites à Sa Majesté par le chapitre de Québec au sujet de ce qui a eu lieu pendant la vacance du siège. Nous avons expliqué à ce chapitre que c'est l'intention de Sa Majesté qu'il ne soit plus parlé de ce qui s'est passé dans cette occasion, et que le tout soit regardé comme non avenu. Depuis ces temps de troubles et de division, notre conduite n'a tendu qu'à rétablir et à maintenir la paix dans le clergé, et nous tiendrons la main à ce qu'elle ne soit pas troublée ; nous y donnerons tous nos soins."

M. de Beauharnais s'appliqua aussi, tout le temps de son administration, à maintenir la discipline militaire parmi les soldats. Il aurait voulu qu'on leur bâtit de bonnes casernes, et qu'ils y fissent régulièrement leur séjour. Il écrit un jour au ministre :

"J'ai pris la liberté de vous faire observer plusieurs fois que le moyen le plus sûr pour maintenir une exacte discipline et contenir les soldats, c'est d'avoir des casernes, parce qu'étant logés chez les habitants ils mangent ensemble ce qu'ils peuvent gagner de part et d'autre, et s'enivrent le plus souvent ; à quoi les officiers ne peuvent remédier. La plupart vont travailler aux forges de Saint-Maurice, ou dans les côtes, et sont employés aux travaux du roi : ce qui contribue encore à les déranger ; et c'est ce qu'on ne peut éviter. . . ."

En travaillant ainsi à maintenir partout la paix, l'union, la discipline, M. de Beauharnais ne pouvait contenter tout le monde. Il y eut des plaintes injustes adressées contre lui à la cour. Dans ces occasions, on est souvent obligé, même contre ses goûts, de faire son propre éloge :

"Il faut, écrit-il à son tour, qu'il y ait bien de l'iniquité dans ce pays-ci, de la part d'un certain nombre de personnes, connues pour telles, pour avoir mandé choses qui ne sont point, et que j'ai su avoir été jusqu'à vous. Tout le Canada devrait chanter mes louanges, surtout les personnes en question, pour le bien que j'y fais tous les jours. Je devrais y être regardé comme un homme sans défaut, par conséquent irréprochable, n'y ayant rien absolument à pouvoir redire sur ma conduite, et encore moins à rectifier. J'espère que M. Mesnard, qui m'en a écrit, vous fera part de ma réponse à ce sujet. Je suis un vieux militaire, d'âge à savoir ne pas donner prise sur moi. Je ne cherche d'ailleurs qu'à vous plaire, et à vous faire ma cour. . . ."

Durant son administration, la colonie resta généralement en paix avec les sauvages. Les Renards seuls, qui se montraient encore insoumis, ayant voulu faire de l'agitation dans la région du lac Michigan, le gou-

[1] Les divisions fâcheuses qui avaient éclaté à la suite de la mort de Mgr de Saint-Vallier commençaient à peine à s'effacer, qu'une ordonnance royale venait répandre le malaise dans le clergé canadien, auquel elle enlevait un de ses privilèges. Je parlerai peut-être, dans une autre occasion, de cet incident et de ce qui y donna lieu.

verneur expédia contre eux M. de Lignery, avec quelques centaines de sauvages amis et de braves Canadiens, qui les firent rentrer dans l'ordre et leur apprirent à respecter le nom français.

Ce nom était désormais connu et acclamé jusque dans l'extrême Ouest : Gauthier de la Vérandrye venait de se rendre jusqu'aux montagnes Rocheuses (1743). Pour mener à bonne fin ce grand voyage d'exploration, il lui avait fallu tout l'appui et l'encouragement du gouverneur de la colonie, M. de Beauharnais. Leurs noms ne doivent pas être séparés dans l'histoire de cette expédition si aventureuse et si hardie.

L'un des derniers actes administratifs de M. de Beauharnais fut en faveur d'une institution de charité. Quelques semaines seulement avant son départ du Canada, il s'associait à l'évêque et à l'intendant de la colonie pour confier à la vénérable d'Youville, la direction de l'hôpital général de Villemarie,[1] fondé un demi-siècle auparavant par les frères Charron. Il contribua ainsi à donner une nouvelle vie à cette institution, qui a toujours été depuis l'une des plus bienfaisantes du Canada.

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Nul n'était plus digne que M. Hocquart de partager avec M. de Beauharnais le gouvernement de la colonie ; et, comme je l'ai déjà dit, jamais gouverneur et intendant ne s'entendirent mieux pour la direction des affaires. Hocquart a été l'émule de Talon, comme intendant du Canada : son administration fut sage, vigilante, bien remplie. On ne compte pas moins de cent cinquante ordonnances ou jugements qu'il rendit, la plupart d'un intérêt général et ayant pour but le progrès et l'avancement de la colonie.

Sous son impulsion, le pays se développa, et les seigneuries se peuplèrent de colons actifs et industrieux ; l'agriculture, encouragée, prit de l'essor : on sortit de la routine, et au lieu de ne semer que les grains ordinaires, on s'appliqua à cultiver aussi le chanvre et le tabac. La culture du tabac, surtout, prit à cette époque des proportions considérables : Hocquart donnait lui-même l'exemple : il écrit au ministre :

"Pour déterminer l'habitant à entreprendre des cultures de tabac, j'ai commencé à leur en montrer l'exemple. Je n'ai pas lieu d'être mécontent des premiers essais que j'ai fait faire cette année à Chambly, à Beauport, et dans une partie du terrain du palais. J'en ai eu environ trente mille pieds. Celui qui a été bien soigné et que j'ai pu visiter de temps en temps a parfaitement mûri et produit des feuilles de 30 pouces de longueur sur 30 de largeur. Je compte prendre des mesures cet hiver pour faire un essai plus considérable, et engager quelques particuliers à faire de même. . . ."

Avant lui, il n'y avait pas encore de chemin de voitures continu de Québec à Montréal. Dupuy s'en plaignait en 1727, et écrivait au mi-

[1] *Edits et Ordonnances*, t. II, p. 391.

nistre : " C'est une grande incommodité, et un obstacle à l'établissement de la colonie."

En 1735, le grand voyer Lanouiller de Boiselair, efficacement secondé et dirigé par l'intendant Hocquart, pouvait écrire à la cour :

"Les chemins sont faits présentement de façon que les voitures peuvent rouler d'une côte à une autre. J'ai descendu cette année au mois d'août dernier en chaise en quatre jours et demi de Montréal à Québec."

Il n'y avait pas encore de ponts sur les rivières : on les traversait en bac, mais à des taux modérés, qui avaient été réglés par l'intendant.[1]

De tous côtés, de belles églises, de confortables presbytères se construisaient sous les auspices de M. Hocquart, qui veillait à ce que chaque habitant payât fidèlement " sa quote-part ".[2]

De sages règlements pourvoyaient à l'alignement des édifices et des rues dans les villes, au maintien du bon ordre, à l'éloignement de tous les dangers publics.

Jamais intendant ne s'appliqua mieux à ses fonctions, ni ne s'attacha davantage à la colonie. Aucun n'a mieux connu le caractère des Canadiens et ne leur a mieux rendu justice. Le portrait qu'il en a laissé est encore vivant ; et la plupart des traits se reconnaissent dans nos populations canadiennes-françaises :

" Les Canadiens, écrit M. Hocquart, sont naturellement grands, bien faits, d'un tempérament vigoureux. Comme les arts n'y sont point gênés par des métiers, et que dans les commencements de l'établissement de la colonie les ouvriers étaient rares, la nécessité les a rendus industrieux de génération en génération. Les habitants des campagnes manient tous adroitement la hache. Ils font eux-mêmes la plupart des ustensiles de labourage, bâtissent leurs maisons, leurs granges. Plusieurs sont tisserands, font de grosse toile et des étoffes qu'ils appellent droguet, dont ils se servent pour se vêtir, eux et leur famille. Ils aiment la distinction et les caresses, sont extrêmement sensibles au mépris et aux moindres punitions. Ils sont intéressés, vindicatifs, sont sujets à l'ivrognerie, font un grand usage d'eau-de-vie, passent pour n'être pas véridiques.

" Ce portrait convient au plus grand nombre, particulièrement aux gens de la campagne. Ceux des villes sont moins vicieux. Tous sont attachés à la religion. On voit peu de scélérats. Ils sont volages, ont trop bonne opinion d'eux-mêmes, ce qui les empêche de réussir, comme ils pourraient le faire dans les arts, l'agriculture et le commerce. Joignons à cela l'oisivité, à laquelle la longueur et la rigueur de l'hiver donnent occasion. Ils aiment la chasse, la navigation, les voyages, et n'ont point l'air grossier et rustique de nos paysans de France.[3] Ils sont communé-

[1] *Edits et Ordonnances*, t. II, p. 366.

[2] *Ibid.*, t. III, passim.

[3] C'est absolument la remarque que faisait, lui aussi, Charlevoix, comme on l'a vu plus haut.

ment assez souples lorsqu'on les pique d'honneur et qu'on les gouverne avec justice ; mais ils sont naturellement indociles. . . .

" Toute l'éducation que reçoivent les enfants d'officiers et des gentilshommes se borne à très peu de chose : à peine savent-ils lire et écrire ; ils ignorent les premiers éléments de la géographie, de l'histoire. Il serait bien à désirer qu'ils fussent plus instruits. . . .

" Les Canadiennes sont spirituelles, ce qui leur donne de la supériorité sur les hommes dans presque tous les états. Les gens de la campagne n'entreprennent et ne concluent rien de quelque conséquence sans leur avis et leur approbation. Beaucoup de femmes de négociants gouvernent les affaires de commerce de leurs maris ; ces dernières, pour la plupart, ne sont que peu ou point distraites par le jeu et les autres amusements. Les femmes d'officiers, en général, aiment la dissipation ; les maisons du général et de l'intendant sont souvent leur rendez-vous d'assemblée. Elles sollicitent, comme elles font partout, pour leurs maris, leurs enfants, leurs parents ; mais on n'en connaît point dont l'ascendant ait fait commettre des injustices ou quelque chose de contraire au service du roi, quoiqu'il s'en trouve auxquelles le public attribue un crédit qu'elles n'ont point. Toutes aiment la parure, et il n'y a point de distinction, de ce côté-là, entre la femme d'un petit bourgeois et celle d'un gentilhomme ou d'un officier."

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Dans la relation des fêtes du Dauphin, on voit les jésuites et les récollets rivaliser de zèle dans la manifestation de leurs sentiments de loyauté : chaque communauté a même son jour spécial de réjouissances. Mais il n'est pas question du séminaire de Québec. C'est qu'un séminaire épiscopal est censé suivre son évêque ; les élèves du grand et du petit séminaire accompagnèrent sans doute Mgr Dosquet et le chapitre dans la procession solennelle chez les récollets et les jésuites ; ils assistèrent au *Te Deum* qui fut chanté à la cathédrale.

Le séminaire n'avait pas encore, à cette époque, de chapelle extérieure, accessible au public, où pût avoir lieu un *Te Deum*, comme dans les autres communautés. La chapelle du séminaire ne fut construite qu'en 1750.

En 1730, cette vénérable institution fondée par Mgr de Laval traversait une des périodes les plus critiques de son existence. Les deux incendies successifs de 1701 et de 1705, la mort de son fondateur et de tous ses anciens directeurs, la privation de plusieurs sources de revenu dont il jouissait avant les changements opérés par Mgr de Saint-Vallier, la mauvaise administration de quelques-uns de ses procureurs, tout cela avait fortement ébranlé le séminaire : il était réduit à une gêne excessive.

Les revenus ne suffisaient jamais à équilibrer la dépense : chaque année voyait se grossir le déficit ; on en était rendu, en 1730, à une dette de plus de 100,000 livres.

Mais il y avait quelque chose de plus alarmant encore : c'était un certain malaise qui régnait parmi les membres de cette maison, causé par cet esprit de jalousie entre Français et Canadiens qui nous fut si fatal dans nos guerres contre les ennemis de la colonie, et sema des germes de discorde partout où il se fit sentir. Les prêtres canadiens prétendaient, et avec assez de raison, que leurs confrères français étaient prévenus contre eux et ne leur donnaient pas la part à laquelle ils avaient droit dans la direction du séminaire. Leurs plaintes, longtemps comprimées par la présence de M. de Maizerets, pour lequel tous professaient le plus grand respect, éclatèrent après sa mort, et allèrent même au delà de l'océan.

Jamais on ne comprit mieux la sagesse qu'avait montrée Mgr de Laval en unissant son séminaire de Québec à celui des Missions-Etrangères de Paris. De cette institution, pourtant bien affaiblie elle-même à l'époque qui nous occupe, arrivaient à Québec, dans tous les moments critiques, non seulement des recrues utiles pour la conduite du séminaire, des secours matériels considérables, mais surtout des conseils d'une rare prudence. Au sujet des plaintes des prêtres canadiens, les directeurs de Paris écrivent à leurs confrères français de Québec :

" Dieu nous garde de penser comme eux ! Nous connaissons trop votre vertu et votre charité pour vous croire capables de vous prévenir ainsi. Mais après tout vous conviendrez avec nous qu'il est bien fâcheux que, tous les ecclésiastiques du Canada ayant été formés dans votre séminaire depuis l'enfance jusqu'au sacerdoce, durant l'espace de soixante ans, entre lesquels on ne peut nier qu'il n'y ait des gens d'esprit et de talent, suffisamment instruits et vertueux, il ne s'en soit point encore trouvé, dans un si grand nombre, qui d'ailleurs sont estimés des gens du monde, que vous ayez jugés dignes d'être unis à vous pour devenir dès à présent vos confrères, et un jour vos successeurs.

" Vous savez bien qu'il faut que tôt ou tard le clergé du Canada se gouverne par lui-même, sans avoir besoin qu'on envoie à perpétuité des prêtres français pour le gouverner. Vous savez d'ailleurs que nos règlements portent que dans tous les lieux de nos missions, dès que nous aurons formé des prêtres du pays suffisamment pour qu'ils puissent se passer de nous, nous nous retirerons de bon cœur pour aller travailler ailleurs. . . . Il paraît donc que vous devriez tendre à mettre le plus tôt que vous pourrez entre les mains des ecclésiastiques du Canada le soin d'élever le clergé composé de leurs compatriotes. . . ."

L'un des effets les plus immédiats de cette lettre fut la nomination de M. Plante, un natif de l'île d'Orléans, reconnu pour son grand mérite, comme l'un des directeurs du séminaire. C'était une première satisfaction donnée aux Canadiens. Mais aucun prêtre né dans la colonie ne put arriver à la charge de supérieur, du temps du régime français.

Celui qui occupait ce poste important, en 1730, était M. Lyon de Saint-Féréol. Il y était depuis 1726. " C'était un prêtre d'un esprit mûr,

d'une saine doctrine, docteur de Sorbonne, plein de piété et de détachement de toutes les choses du monde. On espérait que sa noblesse lui donnerait du crédit, et que son usage des communautés religieuses où il avait toujours demeuré le rendrait propre à rendre de grands services." [1]

Malheureusement il ne réussit pas à se faire aimer de ses confrères canadiens ; ils devinrent bientôt très prévenus contre lui : et ce qui augmenta leurs préventions, c'est qu'il avait la réputation d'être très attaché à Saint-Sulpice, et qu'on le supposa, sans plus de raison, disposé à favoriser une union du séminaire de Québec avec celui de Montréal. Voici ce que Mgr Dosquet écrivait un jour à ce sujet au ministre :

" Je suis certain que le témoignage qu'on vous a rendu de M. Lyon n'est pas juste. Je le connais à fond, ayant demeuré plusieurs années avec lui. Il est naturellement doux, et incapable de faire de la peine à personne sans sujet. Je me suis informé des difficultés qu'il a eues ici jusqu'à mon arrivée : elles naissaient de l'idée qu'on s'était faite qu'il voulait réunir le séminaire à celui de Saint-Sulpice, et aussi de l'envie que les Canadiens avaient de se rendre maîtres de cette maison, et d'en exclure les Français. C'est ce qui fait qu'ils s'étaient ligués tous contre lui, et qu'ils excitaient même les écoliers à ne pas lui obéir. Mais le public commence à lui rendre justice, et l'on admire sa vertu et sa patience d'avoir souffert si longtemps." [2]

Quoi qu'il en soit, malgré sa bonne volonté, M. de Saint Féréol ne répondit pas aux espérances qu'on avait conçues à son égard. Son administration ne fut pas heureuse. Il ne fit rien surtout pour améliorer la condition financière du séminaire ; et il se décida au bout de quelques années à repasser en France.

Il était réservé à son successeur, M. Vallier, un autre Français, de premier mérite, d'affermir le séminaire sur un pied de prospérité morale et matérielle qu'il ne connaissait pas depuis longtemps. Cet homme, vraiment supérieur sous tous les rapports, s'attacha jusqu'à la mort à cette institution et lui rendit des services inappréciables.

Jamais, du reste, le séminaire ne cessa de jouir de l'estime et de la reconnaissance de tous les Canadiens. MM. de Beauharnais et Hocquart écrivaient un jour à la cour :

" Nous ne pouvons que vous dire beaucoup de bien de cette communauté, qui a été de tout temps fort utile à cette colonie par l'éducation gratuite qu'elle a donnée pendant longtemps aux jeunes gens, et qu'elle serait encore très disposée à donner comme autrefois, si elle se trouvait libérée des dettes considérables qu'elle a été dans la nécessité de contracter à cause des pertes qu'elle a essuyées." [3]

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[1] Histoire manuscrite du séminaire de Québec.

[2] Lettre de Mgr Dosquet au ministre, 29 août 1730.

[3] Lettre de Beauharnais et Hocquart au ministre, 10 octobre 1734.

En 1730, les principaux citoyens de Québec donnèrent au séminaire un précieux témoignagne d'estime et d'attachement. Touchés à la vue de la pénible situation financière où il se trouvait, ils adressèrent au ministre secrétaire d'Etat la requête suivante en sa faveur :

"Monseigneur, Supplient très humblement les soussignés des différents états du Canada et de la ville de Québec, et prennent la liberté de vous représenter que jusqu'à ce jour, depuis plus de soixante ans, tout le Canada se sent d'une manière particulière obligé envers le séminaire de Québec, établi sous le bon plaisir et l'autorité de Louis XIV de glorieuse mémoire : la colonie lui est redevable de la bonne éducation de la plupart des personnes qui la forment, par le soin qu'il a pris d'élever la jeunesse ; elle lui doit ce nombre de prêtres, curés et missionnaires, qui avec zèle se sont appliqués, comme ceux d'à présent s'appliquent à desservir la plus grande partie de ses paroisses, et même des missions parmi les sauvages.

"Elle doit par conséquent ressentir vivement la peine et l'embarras où il se trouve aujourd'hui à cause des dettes que tout le monde en ce pays sait avoir été contractées en conséquence des malheurs qui lui sont arrivés, ou des pertes considérables qu'il a souffertes ; si mieux on n'aime l'attribuer à la trop grande mais charitable générosité des personnes qui l'ont gouverné jusqu'à présent.

"Cette communauté est visiblement prête à succomber sous le poids des dites dettes qui l'accablent, et qui l'empêchent de faire actuellement au pays autant de bien qu'elle en a fait par le passé, et qui cependant ne lui en ôtent point le désir ni la volonté, ainsi qu'évidemment il paraît par les efforts qu'ils font tous les jours.

"C'est pourquoi, monseigneur, les soussignés vous prient très humblement de vouloir bien auprès du roi, notre illustre monarque, dont la Nouvelle-France éprouve chaque jour les bontés et libéralités royales, honorer d'une protection spéciale et particulière cette dite communauté.

"Québec, 18 octobre 1730.

"De La Tour, doyen du chapitre, vicaire général ; Chartier de Lotbinière, archidiacre de Québec ; Hazeur, grand pénitencier ; Le Page de Sainte-Claire ; G. de Tonnancourt, chanoine ; Dupont ; Courval ; Grandmesnil ; Beaudoin [1] ; de Lino, premier conseiller ; Sarrazin ; Macart ; Cugnet ; Foucault ; Bauus ; La Ronde Denys ; Adhémar de Lantagnac ; de Saint-Vincent ; Dufiguier ; Charest ; Riverin ; La Chassaigne ; Berthelot de Beaucour ; Le Verrier [2] ; Chaussegros de Léry ; Vaudreuil de Cavagnial [3] ; Rigaud de Vaudreuil ; Duplessis Faber ; Péan ; Longueuil."

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[1] Gervais Beaudoin, chirurgien, médecin des ursulines de Québec, demeurait à la basse ville rue Sous-le-Fort.

[2] Procureur général au conseil. Il donna longtemps à Québec des cours de droit. Voir mon étude sur le P. de Bonnécamps, dans les *Mémoires de la Société royale*, 2e série, t. I, p. 31.

[3] Canadien de naissance, il fut notre dernier gouverneur sous le régime français.

Malheureusement la cour resta sourde à cette demande pourtant si chaleureuse et si bien appuyée ; et le séminaire se vit laissé à ses seules ressources pour se tirer de l'embarras financier où il se trouvait.

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Voilà donc, au bas de cette requête en faveur du séminaire, les noms de quelques-uns des principaux citoyens de Québec qui prirent part aux grandes fêtes en l'honneur du Dauphin. Il y a là, outre les sommités ecclésiastiques, des conseillers, des militaires, des hommes de professions libérales, des savants. Je prends deux de ces noms au hasard, et c'est par là que je termine.

Québec pouvait se vanter de posséder, à cette époque, deux représentants très distingués de la science, Chaussegros de Léry, pour le génie civil, Sarrazin, pour les sciences naturelles : tous deux avaient une réputation européenne.

Chaussegros de Léry, qui a été mentionné plusieurs fois dans cette étude, a attaché son nom comme ingénieur à la plupart des grandes constructions de l'époque, au Canada. Etant encore en France, il avait composé un ouvrage très remarquable ; voici ce qu'il en écrivait lui-même un jour au ministre :

" Avant de venir dans ce pays, je m'étais occupé à faire un Traité de Fortifications, divisé en huit livres, qui contiennent plus de cent belles planches, que j'ai dessinées avec beaucoup d'exactitude. Feu Mgr le duc d'Orléans voulait le faire graver. Je partis pour ce pays peu de temps après. Cela n'a pas eu lieu ; et je ne suis pas en état d'en faire la dépense. . . ." [1]

Il communiqua son livre à M. de Beauharnais. Le général était en état de pouvoir l'apprécier ; et voici ce qu'il écrivit lui-même au ministre :

" M. Chaussegros de Léry m'a fait voir un Traité de Fortifications, divisé en huit livres, prêt à être gravé et imprimé. Je crois que cet ouvrage mériterait d'être mis au jour. Il traite généralement de tout ce qui regarde la manière de fortifier les places, les attaquer et les défendre. Il est rempli de quantité de planches : il y en a cent trente-deux. Dans un des livres, dessinées très proprement, il y a plusieurs nouvelles manières de fortifier les places. Il l'aurait mis au jour, s'il avait eu les moyens d'en faire les avances.

" Comme cet ingénieur est du département de la marine, étant sous vos ordres, je crois que vous ne serez point fâché de voir cet ouvrage, et qu'il parût. Il m'a dit qu'avec 3 ou 4,000 livres on ferait graver toutes les planches. L'imprimerie ne serait pas d'une grande dépense. Les exemplaires paieraient au delà de tous ces frais.

" Il m'a dit aussi que feu M. Renau en avait voulu faire les avances. Le sieur Chaussegros était prêt à le lui envoyer, quand il apprit sa mort.

[1] Lettre de Chaussegros au ministre, Québec, octobre 1739.

"Si vous jugez à propos que ce traité soit mis au jour, j'aurai l'honneur de vous l'envoyer l'année prochaine. M. de Beauvilliers, ingénieur, qui l'a vu, pourra vous dire ce qu'est cet ouvrage. Pour moi, je crois qu'il devrait être donné au public; il fera voir que les ingénieurs qui sont sous vos ordres savent leur métier." [1]

La cour ne jugea pas à propos de faire cette légère dépense. Elle désirait bien "voir fleurir de plus en plus dans le royaume les sciences et les arts",[2] mais à condition qu'il n'en coutât rien au trésor.

Pour être juste, cependant, il faut dire qu'elle accordait de généreuses gratifications au docteur Sarrazin pour ses travaux scientifiques au Canada. Mais le docteur n'épargnait ni peines, ni fatigues, ni voyages. Chaque année, il préparait pour l'Académie des sciences dont il était membre correspondant, quelque travail "sur les recherches curieuses auxquelles il s'attachait dans l'intervalle de ses fonctions de médecin".[3] C'est surtout la botanique et la zoologie qui faisaient l'objet de ses études et de ses travaux. Ses descriptions du loup marin et du rat musqué furent très appréciées à Paris. On attendait toujours avec impatience ses envois au jardin des plantes.[4] Le gouverneur et l'intendant écrivant un jour à la cour à propos de Sarrazin :

"Il élève plusieurs plantes pour le jardin royal, qu'il n'enverra que l'année prochaine, parce qu'elles n'ont pas encore pris racine depuis qu'il les a transplantées."

Le docteur Sarrazin ne négligeait rien, dans ses voyages, de ce qui pouvait intéresser les sciences naturelles : nos eaux minérales ne lui

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[1] Lettre de Beauharnais au ministre, 26 octobre 1727.

[2] Lettre de M. de Maurepas à Beauharnais, Versailles, 27 avril 1728.

[3] Lettre de Vaudreuil et Begon au ministre, 8 novembre 1718.

[4] Il est remarquable comme on s'occupait beaucoup de botanique, au Canada, à cette époque, et d'envois au jardin des plantes de Paris. Je lis dans une lettre de M. de Beauharnais au ministre, au sujet du sieur de Muy, enseigne des troupes :

"Cet officier s'est appliqué à la connaissance des plantes pendant qu'il a été dans les pays d'en haut. Il en a rapporté en poudre, en racines et feuilles, comme vous me le marquez. Il assure avoir guéri quantité de sauvages de différentes maladies. Je pense que beaucoup de ses plantes sont inconnues en France. Il passe dans le vaisseau du roi, chargé des paquets de la cour. Vous serez en état de tirer de lui ses connaissances, ayant fait un mémoire instructif sur leur propriété."

Je lis aussi dans une lettre de l'intendant Hocquart au ministre :

"J'ai fait embarquer sur *le Rubis* cinq caisses de plantes pour le jardin du roi, qui m'ont été remises, trois par le sieur Gosselin, chanoine, une par le sieur La Croix, chirurgien, et la dernière par le sieur Favre, curé de Saint-Sulpice. Elles sont à votre adresse. J'en donne avis à M. de Beauharnais, à Rochefort, afin qu'il les envoie à Paris."

M. Hocquart écrit encore au ministre l'année suivante :

"J'ai fait charger sur le vaisseau du roi différentes caisses contenant diverses plantes, graines et minéraux, dont le mémoire est ci-joint. J'en adresse un pareil à M. de Ricouart.

"La plupart des plantes ont été recueillies par le sieur abbé Gosselin, auquel j'ai fait payer la somme de 250 francs pour son remboursement de frais qu'il a faits à

étaient pas inconnues : le gouverneur et l'intendant écrivent un jour au ministre :

"Il a visité l'été dernier des eaux minérales qui se trouvent aux environs des Trois-Rivières. Vous trouverez ci-joint un mémoire de ce médecin qui en fait connaître les qualités et les propriétés et le succès qu'elles ont eu jusqu'à présent."

Profondément versé dans les sciences naturelles, Sarrazin ne négligeait pas sa profession ; il était toujours à la recherche des remèdes les plus efficaces pour le soulagement de l'humanité. Je trouve à ce sujet un détail assez curieux dans une dépêche de MM. de Vaudreuil et Begon à la cour :

"Le sieur Sarrazin, disent-ils, nous a représenté qu'il y a en ce pays un grand nombre de personnes qui sont attaquées de maladies de poitrine, et que le remède le plus essentiel pour ces maladies est le lait d'ânesse. Comme il n'y point en cette colonie d'animaux de cette espèce, nous prions le conseil de vouloir bien ordonner qu'il en soit envoyé l'année prochaine par le vaisseau du roi un mâle et une femelle."

Le ministre, entraîné cette fois par un vif mouvement de générosité, mit en apostille sur la lettre : "Il faut écrire à M. de Beauharnais d'envoyer un mâle et trois femelles." [1]

Curieuse et sympathique figure que celle de Sarrazin ; l'une des plus intéressantes et des plus pures de notre histoire. La sœur Duplessis écrit à son sujet dans une de ses lettres :

"Il est marié à Québec, où il est conseiller au conseil supérieur. Il a une fille et un garçon ; mais il est toujours malade, chagrin et rêveur. C'est un homme d'un rare savoir : il est fort habile dans son art et fort estimé à l'Académie des sciences, où il envoie tous les ans des mémoires fort recherchés."

On sait qu'il avait un jour renoncé au monde pour embrasser l'état ecclésiastique.[2] Il n'y resta que quelques mois, et rentra dans le monde ; mais il y garda toujours cet air "chagrin et rêveur" dont parle la sœur Duplessis.[3]

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cette occasion. . . . Le surplus des plantes a été recueilli par le sieur La Croix, chirurgien de Québec, auquel j'ai aussi fait payer la somme de 75 francs pour son remboursement de semblables frais.

"A l'égard des caisses de minéraux, je préviens M. de Ricouart de vous les envoyer le plus tôt possible, afin que le nommé Forster qui passe sur le vaisseau du roi puisse se trouver à Paris lorsqu'elles arriveront, pour vous en rendre compte."

Enfin M. Hocquart écrit à la cour dans une autre occasion :

"Le sieur Gosselin m'a remis depuis quelques jours une caisse de plantes pour le jardin du roi, que j'ai fait embarquer sur le navire *le Centaure*, du Havre. La veuve Le Pallieur m'a envoyé de Montréal une petite caisse et un paquet contenant quelques racines propres à différents usages. . . . Cette veuve s'est attachée depuis longtemps à connaître les secrets de la médecine des sauvages. J'adresse le tout à M. Begon."

[1] Lettre de Vaudreuil et Begon au ministre, 6 novembre 1720.

[2] Lettre de Frontenac au ministre, 15 octobre 1697.

[3] Il était natif de Nuits, en Bourgogne.

Lorsqu'il mourut en 1734, voici le beau témoignage que MM. de Beauharnais et Hocquart, écrivant à la cour, rendaient à la mémoire de ce citoyen irréprochable :

" Nous avons l'honneur de vous informer de la mort de M. Sarrazin... Il vint dans cette colonie en 1687, en qualité de chirurgien des troupes. Ses heureuses dispositions pour l'art qu'il exerçait et pour la médecine le firent repasser en France,[1] où il se perfectionna, de manière qu'à son retour et jusqu'à sa mort il a pratiqué la médecine et la chirurgie avec des succès capables de lui procurer une fortune considérable, s'il eût été moins désintéressé. . . .

" L'Académie des sciences, avec laquelle il a été en correspondance pendant de longues années pour des recherches de botanique et d'anatomie, lui a donné souvent des preuves de son estime. . . . Il a servi le roi dans les hôpitaux et à la suite des détachements pour la guerre avec un zèle et une application peu ordinaires. Ses bonnes qualités, ses mœurs irréprochables l'ont fait aimer pendant qu'il a vécu en ce pays, et regretter après sa mort plus que nous ne pouvons vous l'exprimer. . . ."

Si l'on élevait jamais un monument à ce citoyen intègre, à ce savant distingué, serait-il possible d'y inscrire de plus nobles paroles ?

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[1] Il fut remplacé, durant son absence, par le docteur Boudeau, " un très habile homme, dit Frontenac, consommé dans sa profession, aimé et estimé ici de tout le monde, et qui a servi fort longtemps dans les armées de terre et de mer ".

II — *Félix Arvers et le fameux Sonnet*,

Par M. Louis Fréchette.

(Lu le 25 mai 1899.)

Certains poètes ont dû leur première, et même toute leur réputation, à quelque bluette, à quelque travail peu sérieux comme sujet et comme étendue, à quelques stances, à quelques vers que leur plume laissa tomber un jour, comme en se jouant, sur le papier d'où ceux-ci ne devaient prendre leur essor que pour s'envoler vers l'immortalité.

Trois strophes ont fait la fortune de Malherbe. Le *Vase brisé* a mis Sully-Prud'homme en vogue. Le lendemain de la représentation du *Passant*, François Coppée était célèbre.

Que reste-il de tout le bagage littéraire de Lemierre — bagage assez considérable pourtant — si ce n'est un seul vers, qu'on enlève même souvent au pauvre auteur pour l'attribuer à Victor Hugo — on ne prête qu'aux riches — et que l'Angleterre semble avoir pris pour devise :

Le trident de Neptune est le sceptre du monde ?

Il est même certaines gens qui sont sous l'impression que Lemierre n'a jamais écrit que ce vers-là. En vérité, ce serait un vers un peu trop... solitaire.

Cependant, on sait que les œuvres de Malherbe, si peu qu'il en reste, firent du bruit dans son temps ; Sully-Prud'homme et Coppée sont des contemporains dont la popularité est universelle; Lemierre n'est pas un inconnu, sa biographie se trouve dans toutes les encyclopédies.

Or, il est un poète, un poète de notre siècle, qui non seulement n'est connu que par un petit chef-d'œuvre de quatorze vers, mais dont les traces dans la vie et dans le domaine de l'art sont si bien effacées, que, tout récemment encore, ni le lieu ni l'année de sa naissance et de sa mort n'étaient connus du public. C'est certainement le plus curieux exemple que nous ayons des vicissitudes et des caprices de la gloire littéraire.

On a compris que je veux parler de Félix Arvers et de son fameux sonnet.

Donnons-en tout d'abord le texte, de ce fameux sonnet ; nous parlerons de l'auteur ensuite. Il est intitulé : *Amour caché* ; c'est une perle qu'on ne saurait trop admirer.

Mon âme a son secret, ma vie a son mystère :
Un amour éternel en un moment conçu ;
Le mal est sans espoir, aussi j'ai dû le taire,
Et celle qui l'a fait n'en a jamais rien su.

Hélas ! j'aurai passé près d'elle inaperçu,
Toujours à ses côtés et pourtant solitaire ;
Et j'aurai jusqu'au bout fait mon temps sur la terre,
N'osant rien demander et n'ayant rien reçu.

Pour elle, quoique Dieu l'ait faite douce et tendre,
Elle ira son chemin, distraite, et sans entendre
Le murmure d'amour élevé sur ses pas.

A l'austère devoir pieusement fidèle,
Elle dira, lisant ces vers tout remplis d'elle :
"Quelle est donc cette femme ?" et ne comprendra pas !

Je ne suis pas un passionné du sonnet, tant s'en faut ; mais étant donné que cette forme existe avec son esprit et ses règles particulières, je n'hésite pas à proclamer ce sonnet, si l'on ne peut dire le plus parfait, du moins le plus franchement beau qu'ait produit la langue française.

Louis de Veyrières, dans sa *Monographie du Sonnet*, en parlant de celui d'Arvers, y a souligné un peu sévèrement quelques répétitions de mots — trois fois *fait* ou *faite*, et trois fois *rien*. Il aurait pu ajouter quatre fois *elle* et deux fois *amour*. Une certaine irrégularité de contexture y est aussi relevée par les puristes : c'est le défaut de symétrie dans l'entrelacement des rimes féminines et masculines des quatrains. Mais ce sont là d'imperceptibles taches, et le petit poème n'en reste pas moins exquis de rythme, de clarté et de sentiment. Il réunit la pureté de la forme à la grâce mélancolique de la pensée. Il réalise parfaitement la définition de Joseph Delorme : "une idée dans un sonnet, c'est une goutte d'essence dans une larme de cristal".

Philibert Le Duc, dans son recueil : *Sonnets curieux et Sonnets célèbres*, dit que le fameux sonnet qui a sauvé le nom d'Arvers du plus complet oubli fut mis en lumière par Albéric Second. Il se trompe. Avant Albéric Second, Jules Janin l'avait exhumé et signalé, dans son *Histoire de la Littérature dramatique*.

"Tel jeune homme, disait-il, à lire les *Odes et Ballades*, se trouvait poète, et s'écriait : *Moi aussi !* Nos souvenirs ont conservé des pièces charmantes écrites sous cette impression. Ecoutez, par exemple, ce merveilleux sonnet, et dites-moi s'il n'est pas dommage que ces choses-là se perdent et disparaissent à tout jamais comme un article de journal."

Et Jules Janin cite :

Ma vie a son secret, mon âme a son mystère...

"Cette langue est belle, poursuit-il, cette passion est vraie ; il faut y croire. L'auteur de ce sonnet *sans défaut* est mort à vingt-cinq ans, au moment où il allait prendre sa place au soleil ; il s'appelait Félix Arvers."

En disant que Félix Arvers mourut à vingt-cinq ans, Jules Janin faisait erreur. Mais cette erreur était très pardonnable, attendu que, du temps où le célèbre critique écrivait, tout ce qui concernait la personnalité

du poète était resté — de même que son amour mystérieux — dans la plus complète obscurité.

Il était tellement ignoré que, trente ans plus tard, le *Dictionnaire* de Larousse ne mentionne même pas son nom. On le trouve pour la première fois dans le *Supplément* publié en 1878.

Voici ce qu'on y lit :

" ARVERS (Félix), poète de talent et auteur dramatique, dont aucune biographie ne parle, et dont on ignore le pays natal et la date de la naissance, mort en 1850."

Suivent quelques détails sur ses œuvres.

Dans le deuxième *Supplément*, publié en 1891, les auteurs reviennent sur le sujet :

" ARVERS (Alexis-Félix), poète français, né à Paris le 23 juillet 1806, mort dans la même ville le 7 novembre 1850. Faute de renseignements précis sur ce poète qu'un sonnet a immortalisé, nous n'avions pu donner, au tome XVII du *Grand Dictionnaire*, ni la date de sa naissance ni celle de sa mort.... Fils d'un marchand de vin en gros, il fit ses études au collège Charlemagne.... Il fit ensuite son droit, qu'il abandonna avant d'avoir obtenu la license, pour s'adonner à la poésie. Un passage d'une de ses pièces de vers, intitulée *la Vie*, avait fait conjecturer qu'il était devenu notaire ; il y dit d'un interlocuteur qui le conjurait de renoncer à la Muse :

> Cet homme avait raison, au fait ; j'ai dû me taire,
> Je me croyais poète, et me voici notaire.
> J'ai suivi ses conseils, et j'ai sans m'effrayer,
> Subi le lourd fardeau d'une charge à payer.

" Arvers se contenta, ajoute le Larousse, d'être quelque temps clerc de notaire pendant qu'il faisait son droit, et n'acheta aucune charge. Ce fut à la littérature seule, et principalement au théâtre, qu'il demanda ses moyens d'existence.... Malade depuis quelques années, Arvers se fit transporter, le 25 octobre 1850, à la maison Dubois, où il mourut moins de quinze jours après, d'une affection de la moelle épinière. Elégant, distingué, doué d'un esprit charmant et sympathique, Arvers, bien loin de s'enterrer dans le notariat, comme on l'avait conjecturé, passa toute sa vie sur le boulevard et dans les petits théâtres ; il y épuisa sa santé. Sans persévérance, il ne réussit à rien, et resta un vaudeviliste ; il ne s'est survécu que par le sonnet qu'on cite toujours, quand il est question de lui."

La *Grande Encyclopédie* ajoute, après avoir donné à peu près les mêmes détails :

" Ses restes reposent à Césy (Yonne) près de ceux de ses parents."

Ces dates, consignées par Larousse et la *Grande Encyclopédie*, et qui ont évidemment la même source, sont-elles bien authentiques ?

En ce qui regarde celle de la mort du poète, il semble ne pas y avoir de doute, d'autant moins que cette date est confirmée par Louis de Veyrières déjà cité.

La date assignée à sa naissance n'est pas aussi sûre, et voici ce qui me fait supposer qu'elle n'est pas exacte. Dans la pièce intitulée *la Vie*, dont j'ai cité plus haut quelques vers — pièce qui ne peut être qu'une autobiographie — le poète dit :

> Mais j'ai trente-deux ans accomplis ; à mon âge,
> Il faut songer pourtant à se mettre en ménage.

Or cette pièce fait partie du seul recueil de poésies d'Arvers ; et ce recueil, intitulé *Mes Heures perdues*, fut publié en 1833. De sorte que, en supposant même que cette pièce ait été écrite cette même année, la naissance d'Arvers doit remonter au moins à 1801, puisqu'il avait trente-deux ans au moment de sa publication.

Quoi qu'il en soit, c'est dans ce recueil de poésies fugitives et d'essais dramatiques, précédés d'une préface de Théodore de Banville — ouvrage rarissime, cela va sans dire — que se trouve le fameux sonnet.

On a dit que la femme à laquelle il y est fait allusion était Mme Ménessier-Nodier ; mais plusieurs prétendent que l'inspiratrice n'était autre que Mme Victor Hugo, dont Sainte-Beuve, aussi, fut amoureux, mais d'une façon moins discrète.

Ce sonnet, qui a tant fait parler de lui, a longtemps passé pour unique ; les monographistes lui ont presque toujours donné la qualification de *solitaire*, de même qu'au célèbre vers de Lemierre.

Il n'en est rien cependant. Le volume en contient un second qui, bien que n'ayant pas eu l'heureuse fortune de son frère jumeau, ne lui en constitue pas moins un remarquable et digne pendant. Ce deuxième sonnet resta enfoui de longues années dans le recueil de 1833, et n'en sortit qu'en 1862.

Il présente la même délicatesse de sentiment, le même charme rythmique ; de plus ses rimes sont symétriques ; les lettrés méticuleux lui trouveront seuls une petite imperfection de prosodie — une consonnance de la rime du onzième vers avec le premier hémistiche du douzième. Il a pour titre-dédicace : *A mon ami R.*

Le voici :

> J'avais toujours rêvé le bonheur en ménage,
> Comme un port où le cœur, trop longtemps agité,
> Vient trouver, à la fin d'un long pèlerinage,
> Un dernier jour de calme et de sérénité ;

> Une femme modeste, à peu près de mon âge,
> Et deux petits enfants jouant à son côté ;
> Un cercle peu nombreux d'amis du voisinage ;
> Et de joyeux propos dans les beaux soirs d'été.

J'abandonnais l'amour à la jeunesse ardente ;
Je voulais une amie, une âme confidente
Où cacher mes chagrins, qu'elle seule aurait lus.

Le ciel m'a donné plus que je n'osais prétendre :
L'amitié, par le temps, a pris un nom plus tendre,
Et l'amour arriva, qu'on ne l'attendait plus !

Maintenant est-ce tout ? Non. Il existe encore un troisième sonnet d'Arvers, qui, celui-là, n'a jamais été publié de son vivant. Il fut révélé aux dilettantes, en 1881, par un poète de Mâcon, M. Ernest Lafond, dans la préface d'un recueil de sonnets, intitulé : *Sonnets aux Etoiles.*

Ce recueil n'est qu'une plaquette tirée à un petit nombre d'exemplaires, et totalement inconnue en librairie, puisqu'elle n'a jamais été mise dans le commerce. J'en dois la communication à la courtoisie d'un ami de France.

Voici le préambule dont l'auteur fait précéder la précieuse curiosité littéraire offerte à ses lecteurs intimes seulement :

" J'ai encore une communication intéressante à vous faire. A travers les feuillets de ce même manuscrit, je retire un sonnet inédit de Félix Arvers. Il fut mon contemporain d'âge et d'études. Je le recevais quelquefois en Nivernais, où ses vives saillies et sa gaieté doucement railleuse charmaient nos loisirs campagnards. J'ai été, je n'en doute pas, un des premiers à recevoir la confidence du fameux sonnet qui a suffi pour donner à son nom une célébrité que n'atteignent pas toujours les gros livres.

" C'est en 1844, à sa dernière visite à Prunevaux, qui précéda sa maladie et sa mort que, pour payer une hospitalité qui nous était plus précieuse qu'à lui-même, il nous laissa le beau sonnet que vous allez lire.

" Ce sonnet, que nous avons en autographe, a été imprimé par erreur et sans signature dans le charmant volume de poésies inédites publiées après la mort de mon neveu le comte Lafond, qui sans doute en avait une copie et l'avait mêlée à ses papiers."

Puis vient le sonnet annoncé, sonnet que les amateurs s'accordent à ne pas trouver trop indigne de ses aînés :

Dans des vers immortels, que vous savez sans doute,
Dante, acceptant d'un prince et le toit et l'appui,
Des chagrins de l'exil abreuvé goutte à goutte,
Nous a montré son cœur tout plein d'un sombre ennui.

Et combien est amer pour celui qui le goûte
Le pain de l'étranger, et tout ce qu'il en coûte
De monter et descendre à l'escalier d'autrui....
Moi, qui ne le vaux pas, j'ai trouvé mieux que lui.

Ici, malgré ces vers de funèbre présage,
J'ai trouvé le pain bon, et meilleur le visage,
Et l'opulent bien-être et les plaisirs permis.

C'est que Dante, égaré dans des sphères trop hautes,
Avait un protecteur, et que moi j'ai des hôtes ;
C'est qu'il avait un maître et que j'ai des amis.

Il faut bien admettre qu'on ne saurait reconnaître plus poétiquement et plus délicatement le charme d'une cordiale hospitalité.

Cette esquisse ne serait pas complète, si je ne signalais ici une autre curiosité littéraire qui touche à mon sujet, et que je trouve dans l'*Année poétique* de 1899, recueil de vers de différents auteurs, compilés par M. Charles Fuster, et publié récemment par la librairie Fishbacker.

C'est une réponse au célèbre sonnet d'Arvers, signée d'un nom peu connu, *Louis Aigoin.*

Pour mieux faire saisir la très remarquable ingéniosité de cette réponse sous forme de décalque, relisons d'abord le fameux sonnet :

Mon âme a son secret, ma vie a son mystère :
Un amour éternel en un moment conçu ;
Le mal est sans espoir, aussi j'ai dû le taire,
Et celle qui l'a fait n'en a jamais rien su.

Hélas ! j'aurai passé près d'elle inaperçu,
Toujours à ses côtés et pourtant solitaire ;
Et j'aurai jusqu'au bout fait mon temps sur la terre,
N'osant rien demander et n'ayant rien reçu.

Pour elle, quoique Dieu l'ait faite douce et tendre,
Elle ira son chemin, distraite, et sans entendre
Le murmure d'amour élevé sur ses pas.

A l'austère devoir pieusement fidèle,
Elle dira, lisant ces vers tout remplis d'elle :
" Quelle est donc cette femme ? " et ne comprendra pas.

Maintenant, lisons attentivement la réponse. On suppose que c'est une femme qui parle :

Ami, pourquoi nous dire, avec tant de mystère,
Que l'amour éternel en votre âme conçu
Est un mal sans espoir, un secret qu'il faut taire,
Et comment supposer qu'Elle n'en ait rien su ?

Non, vous ne pouviez point passer inaperçu ;
Et vous n'auriez pas dû vous croire solitaire.
Parfois les plus aimés font leur temps sur la terre,
N'osant rien demander et n'ayant rien reçu.

Pourtant Dieu mit en nous un cœur sensible et tendre ;
Toutes, dans le chemin, nous trouvons doux d'entendre
Le murmure d'amour élevé sur nos pas.

Celle qui veut rester à son devoir fidèle
S'est émue en lisant vos vers tout remplis d'elle :
Elle avait bien compris.... mais ne le disait pas.

N'est-ce pas que c'est charmant ?

Ce remarquable " jeu d'esprit ", bien que publié dans l'*Année poétique* de 1899, remonte cependant à plus haut. On trouve, dans le volume V du *Bookman*, journal littéraire illustré, de Londres, les lignes suivantes extraites d'une *Lettre de Paris* signée Alfred Manière :

"Il doit bientôt paraître en librairie une très sérieuse étude sur un des caractères les plus curieux du siècle, sur Félix Arvers, qu'un sonnet a rendu célèbre. L'auteur, M. Louis Aigoin, a connu Arvers personnellement ; ce n'est donc plus un jeune homme, puisque le poète est mort en 1850. Ce travail contient en particulier des détails sur le fameux sonnet, qui nous donnent à entendre que la femme mystérieuse dont il est question était Mme Ménessier, la fille de Charles Nodier.

"M. Louis Aigoin ajoute à cette étude ce qu'il appelle des *variations sur le sujet*. Ces variations consistent en trois sonnets reproduisant exactement les quatorze rimes de l'original. Le premier est supposé écrit par la personne même qui avait inspiré celui-ci ; le second est la réponse d'une dame fin-de-siècle ; le troisième est intitulé : *Le sonnet d'Arvers à revers.*"

Malheureusement, de ces trois sonnets, le *Bookman* ne donne que le premier, et c'est celui que je viens de citer. Je n'ai pu me procurer les deux autres, ne sachant même pas si l'ouvrage de Louis Aigoin, dont le correspondant parisien de la revue anglaise annonce l'apparition, a jamais été imprimé. En tout cas, il n'a pas fait grand bruit.

Mais, si je n'ai pas ces deux sonnets sous la main, j'en ai deux autres, en revanche, dont je laisserai deviner le nom de l'auteur. Ce sont toujours des variations sur le même thème et les mêmes rimes.

Le premier laisse aussi entrevoir un mystère du cœur, mais un mystère pour le public, et non pour l'héroïne de la situation. C'est peut-être moins poétique, mais c'est à coup sûr plus humain.

Ecoutez :

Pour tous — Elle excepté — ma vie a son mystère :
Un amour éternel depuis longtemps conçu.
Mon cœur en débordait ; pourtant j'ai dû le taire :
Nul profane ici-bas n'en a jamais rien su.

A distance je vis, discret, inaperçu ;
On me croit en ce monde un passant solitaire ;
Mais j'eus plus que ma part de bonheur sur la terre ;
Nul ne saura jamais tout ce que j'ai reçu.

Jamais femme ne fut plus qu'elle douce et tendre ;
Je la suis en silence, et sans paraître entendre
Les murmures flatteurs soulevés sur ses pas.

Et, tandis que, dans l'ombre, à mon secret fidèle,
Je cache à tous les yeux ces vers tout remplis d'elle,
Plusieurs s'étonneront, mais ne comprendront pas.

Ce sonnet peut s'appeler une parodie ; le suivant est sous forme de réponse :

Non, non, votre secret n'était pas un mystère.
Cet amour éternel discrètement conçu,
Vous avez, ô poète, eu grand tort de le taire :
Celle qui l'inspirait l'a toujours fort bien su.

Vous n'avez point passé près d'elle inaperçu ;
Votre âme à ses côtés n'était pas solitaire ;
Mais vous avez perdu votre temps sur la terre :
N'osant rien demander, vous n'avez rien reçu.

Les femmes ont le cœur aussi subtil que tendre :
Pas une, soyez sûr, qui marche sans entendre
Le moindre des soupirs exhalés sur ses pas.

A l'instinct de leur sexe uniquement fidèles,
Des centaines, croyant vos vers tout remplis d'elles,
Raillaient votre silence.... et ne vous plaignaient pas.

Pour faire disparaître l'impression que pourrait laisser cette boutade dans les esprits romanesques — s'il en est parmi mes lecteurs — je clorai par une traduction anglaise du fameux sonnet, due à la plume experte d'un de nos confrères de la Société royale, M. le professeur George Murray. Elle se trouve à la page 156 de son beau volume : *Verses and Versions.*

Une traduction de vers français en vers anglais m'a toujours semblé une impossibilité : M. George Murray s'est chargé de prouver plus d'une fois qu'il n'y a rien d'impossible pour la volonté et le talent :

There is a secret shrined within my soul,
A deathless love, in one brief moment born,
A hopeless passion that I must control
And hide from her to whom its vows are sworn.

Yes, I must pass unnoticed by her eyes,
Close by her side, consumed by lonely thought,
And shrouding still my secret, I shall die
By naught rewarded, having sued for naught.

But she — though God has dower'd her with a sweet
And tender nature — knows not that her feet
Lure me to follow her where'er they stray :

Too pure to dream her love can be desired —
Were she to read these lines she has inspired,
" Who is this lady ?" she would calmly say.

Si cette traduction ne vaut pas l'original, ce n'est pas la faute de M. Murray : c'est la faute de l'Angleterre.

III—*Jean-François de La Rocque, Seigneur de Roberval,*

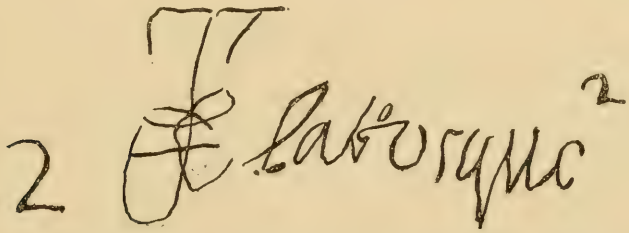
Par M. N.-E. Dionne.

(Lu le 25 mai 1899.)

I

Jean-François de La Rocque naquit vers l'an 1500, très probablement dans le Languedoc, où son père, à un moment donné, exerçait les fonctions de connétable, à Carcassonne. Lescarbot en a fait un gentilhomme du pays de Vimeux,[1] et voilà pourquoi nous le voyons souvent désigné sous le nom de *Petit roi de Vimeu.* Ferland le fait naître en Picardie.

Le père de Jean-François s'appelait Bernard; il était seigneur d'Arzains et Armenys. Charles VIII lui avait confié la tâche de réprimer les brigandages opérés par "les gens de guerre venus du



SIGNATURE DE J.-F. DE LA ROCQUE, SEIGNEUR DE ROBERVAL.

royaume de Cécile ou d'ailleurs delà les mons". L'on constate qu'en 1501 Bernard de La Rocque, marié à Isabeau de Poitiers, qui lui avait apporté la terre de Roberval, était connétable de Carcassonne.

Bernard de La Rocque mourut en 1514, laissant deux enfants mineurs: Charlotte et Jean-François. Si l'on en croit Charlevoix,[2] il y aurait eu un troisième enfant, surnommé plus tard *le Gendarme d'Annibal,* lequel aurait péri en mer, en 1549. L'existence de ce *brave d'entre les braves* est pour le moins problématique, car on ne le rencontre nulle part ailleurs que dans les écrits du savant jésuite. Mais ce qui est certain, c'est l'existence d'une sœur de Jean-François. Charlotte épousa, en juin 1526, Guillaume de Magdaillan, seigneur de Montataire.

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[1] Lescarbot, *Hist. de la Nouvelle-France,* Ed. Tross, t. II, p. 385.
[2] Charlevoix, t. I, p. 39.

Les contrats qui restent de ces temps reculés nous apportent les noms de plusieurs cousins germains de Jean-François. Ce furent, entre autres, Bertrand de La Rocque, capitaine de Cherbourg ; Jacques de La Rocque ; Jeanne de La Rocque, religieuse à Poissy, en 1520 ; Marquise de La Rocque et Françoise de La Rocque.[1] Il y eut, en outre, la fameuse Marguerite, nièce de Jean-François, que celui-ci, lors de ses courses en Amérique, abandonna avec son amant et sa nourrice Damienne (d'autres disent Bastienne) sur l'île de la Demoiselle. Après avoir vécu pendant vingt-neuf mois sur cet îlot inhospitalier, l'infortunée Marguerite, recueillie par des marins et conduite en France, se serait réfugiée à Nontron, dans le Périgord, afin d'éviter la colère de son oncle. André Thévet, qui rapporte ce touchant épisode, dans sa *Cosmographie universelle*, était l'ami, le familier de Roberval.[2]

Voilà ce qui nous est parvenu de la famille des La Rocque. Elle était considérable et considérée. Celui qui aurait pu en conserver le nom aussi bien que le prestige faillit à la tâche. Il ne songea pas même à faire souche, préférant la vie de plaisir, d'opulence aux joies de la famille. L'on se complaît cependant à reconnaître dans le seigneur de Roberval, vice-roi du Canada, de l'énergie dans ses entreprises et un grand fond de patriotisme.

II

Lors de sa majorité, Jean-François de La Rocque prit possession des biens que lui avait légués son père. Il en acquit lui-même de nouveaux, car on le voit, à cette époque, mentionné comme seigneur de Roberval, Noë Saint-Remy, Noë Saint-Martin, Bacouel et Mauru, au duché de Valois (Oise), de Seuil, Acy-lès-Rethel, Poix et Saint-Soupplex, dans le Rethelois (Ardennes), d'Arzains et Armenys, dans le Languedoc (Aude).

Son faste lui attira des amis, et sa prodigalité tout un essaim d'adulateurs. Clément Marot, dont la bourse était le plus souvent à sec, ne se fit pas faute de frapper à la porte du brillant seigneur. Pour le toucher il lui adressa une épître en vers, dans le genre de son épître à François Ier, où il s'agissait d'un emprunt d'argent. A lui le poète demande un cheval. La pièce sent son Marot, au ton familier et à la tournure obséquieuse du quémandeur. La voici :

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[1] Ces renseignements généalogiques ont été puisés aux archives du château de Roberval par M. l'abbé Emile Morel, curé de Chevrières, qui les a publiés en 1892 dans le *Bulletin de la Société historique de Compiègne*.

[2] Thévet, *l'Heptaméron des Nouvelles de très illustre et très excellente Princesse Marguerite de Valois, Royne de Navarre*, Paris, 1559, Nouvelle LXVII.

EPISTRE POUR LE CAPITAINE BOURGEON, À M. DE LA ROCQUE.

Comme à celuy, en qui plus fort j'espère,
Et que je tien pour père et plus que père,
A vous me plain par cet escript léger,
Que je ne puy de Paris desloger.
Et si en ay vouloir, tel comme il fault ;
Mais quoy ? C'est tout : le reste me deffault.
J'entend cela qui m'est le plus duysant.[2]
Mais que me vault d'aller tant devisant ?
Venons au point : Vous sçavez, sans reproche,
Que suis boyteux, au moins comme je cloche.
Mais je ne sçay, si vous sçavez commant
Je n'ay cheval, ne mulle, ne jument.
Pourquoy, Monsieur, je vous le fay sçavoir,
A celle fin que m'en faciez avoir.
Ou il fauldra (la chose est toute seure,
Que voise[3] à pied, ou bien que je demeure ;
Car en finer[4] je ne m'attend d'ailleurs.
Raison pourquoy ? Il n'est plus de bailleurs,
Sinon de ceuls lesquels dormiroyent bien.
Si vous supply, le très cher seigneur mien,
Baillez assez, mais ne vueillez dormir,
Quand Désespoir me veut faire gémir.
Voicy comment bien fort de luy me mocque.
O Désespoir, croy que soubz une Rocque,
Rocque bien ferme et pleine d'asseurance
Pour mon secours est cachée Espérance.
Si elle en sort, te donnera carrière
Et pour ce donc recule-toy arrière.
Lors Désespoir s'en va saignant du nez,
Mais ce n'est rien, si vous ne l'eschinez,
Car aultrement jamais ne cessera
De tourmenter le Bourgeon qui sera
Tousiours bourgeon, sans raisin devenir
S'il ne vous plaist de luy vous souvenir.

Touché par les appels incessants d'amis et de flatteurs, le seigneur de Roberval, donnait sans compter ; si bien qu'il vit sa fortune décroître rapidement. Bientôt lui furent enlevées ses terres de Seuil, Poix et Bacouel. François 1er, qui semble avoir eu un faible pour ce sujet qui dépensait en folies tout son patrimoine, lui accordait des faveurs particulières. Roberval reçut le titre de porte-enseigne de cent hommes d'armes des ordonnances royales. Vers 1530, le roi l'avait nommé écuyer ordinaire de son écurie. Mais ces gracieusetés devaient être surpassées par l'émission de lettres patentes en vertu desquelles le seigneur de Roberval se trouvait revêtu de la charge de lieutenant général, chef et capitaine d'une entreprise de colonisation au Canada.

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[1] Manque.
[2] Convenable.
[3] Que j'aille à pied.
[4] Financer.

III

Ce fut le 15 janvier 1540 que François 1er confia à Jean-François de La Rocque, seigneur de Roberval, la haute mission de fonder une colonie française sur les rives du Saint-Laurent. "C'est, disent les lettres patentes, pour la bonne et entière confiance qu'il a par longue expérience de la personne de son amé et féal Jehan-François de La Rocque, chevalier, sieur de Roberval, et de ses sens, suffisance, loyauté et autres bonnes vertus", que le roi lui donne le titre de vice-roi du Canada, Hochelaga, Saguenay et autres pays circonvoisins et maritimes. François 1er lui accordait la suprématie sur toutes les terres arrosées par le golfe et le fleuve Saint-Laurent, sur les côtes baignées par l'Atlantique, dans cette partie de l'Amérique du Nord que l'on désignait déjà sous le nom de Norembègue, quoiqu'on n'en connût à peu près rien.

Le but de l'expédition future est clairement indiqué : se mettre en rapport avec les sauvages, habiter le pays et y construire des villes, des forts et des églises pour l'établissement de la foi catholique, "afin de mieux parvenir, dit le roi, à notre intention et faire chose agréable à Dieu, notre Créateur, Sauveur et Rédempteur, et qui soit à la sanctification de notre Mère la sainte Église catholique, de laquelle nous sommes dit et nommé le premier fils".

Le roi accordait aux gentilshommes qui suivraient Roberval, le tiers des profits qui pourraient résulter de ce voyage, un autre tiers au lieutenant général, et Sa Majesté se réservait le reste pour elle-même, afin d'en disposer pour des entreprises de même nature.

Le chef de l'expédition était muni d'amples pouvoirs concernant la justice, tels que de faire des lois, d'édicter des statuts et ordonnances, et enfin de punir ou de pardonner les méfaits. Si, par hasard, il tombait malade, ou s'il était menacé de mourir, le lieutenant général avait la faculté de se choisir un successeur jouissant d'une autorité égale à la sienne.

Les lettres patentes établissaient en outre :

1° Pleine jouissance, autorité, charge, commission et commandement de lever partout où bon lui semblerait, des gens de guerre et des artisans, pourvu qu'ils consentissent et qu'ils fussent raisonnablement salariés ;

2° L'approvisionnement d'armes, artillerie, poudre, piques, arquebuses, etc., etc. ;

3° Le recrutement de tel nombre de navires qu'il croirait nécessaire, libres de droits de péage, subside et impôt ;

4° Avis à tous les lieutenants généraux, gouverneurs, amiraux, vice-amiraux, baillis, sénéchaux, prévôts, maîtres de ville, de donner de l'aide à Roberval, ainsi qu'à ses gens, commis et députés.

Ces lettres furent signées à Fontainebleau [1] de la main du cardinal de Tournon, en présence de Bayard, et enregistrées aux archives du Châtelet de Paris par Guillaume Payen et Jehan Cronne, notaires du roi.

Le 6 février [2], Roberval prêta le serment voulu, en présence de Sanson et du chancelier Tournon. Le lendemain Jehan de Moreau, lieutenant en l'ordonnance, seigneur de Pully et garde de la prévôté d'Orléans, émit les lettres confirmatives des pouvoirs préalablement confiés à Roberval. Elles sont signées par François Taupitre et Claude d'Orléans, et portent pour suscription ces mots : " Vydimus du pouvoir donné par le Roy au Seigneur de Roberval ".

Le 7 du même mois,[3] de nouvelles lettres patentes, datées de Fontainebleau, enjoignaient aux présidents et conseillers des parlements de Paris, Toulouse, Bordeaux, Rouen et Dijon, de fournir à Roberval des prisonniers pour ses équipages.

A la faveur de ces lettres, Roberval chargea aussitôt son beau-frère Guillaume de Magdaillan, seigneur de Montataire, de se transporter à Paris et dans les autres villes où il avait la permission de recruter des prisonniers, et là de s'entendre avec eux au sujet de leur engagement. Il chargea également Paul d'Auxilhon, seigneur de Senneterre en la sénéchaussée de Carcassonne, d'en faire autant "dans les ressorts de la sénéchaussée de Carcassonne, Castres, justices et juridictions de Béziers, Narbonne, Alby, Lymous, Allais et pays de Sault ". Et le vendredi, 11 mars, Roberval fit une troisième procuration, à Rouen, pour Alonce de Cyville, sieur de Saint-Martin-aux-Buneaux, lui donnant la charge d'enrôler des prisonniers dans le ressort du parlement de Rouen.

D'après la teneur de ces trois procurations, tous les prisonniers devaient être rendus à Paris ou à Rouen avant le dernier jour de mars, ou à Saint-Malo avant le 10 avril. Les procédés furent lents, car partout l'on s'opposa à livrer les prisonniers avant que les sentences prononcées contre eux eussent été confirmées. Puis les criminels eux-mêmes semblaient hésiter à dire adieu à la France pour courir les risques de la mer. Tant et si bien qu'à la date du 20 avril, Guillaume de Magdaillan déclarait n'avoir retiré de prison qu'un nommé Jehan Grevyn, condamné a être étranglé et pendu par le bailli d'Autun, et qu'il avait fallu réinterner, faute d'avoir satisfait à son naulage.

Comme on le voit, les papiers de Roberval étaient en règle, et il aurait pu partir de bonne heure au printemps de 1540, s'il n'eut eu à résoudre la grande question d'argent nécessaire pour un armement aussi dispendieux. Bien que le roi lui eût fait remettre 45,000 livres par Jean Duval, trésorier de l'épargne, les ressources lui faisaient encore défaut, car il importait que ses navires fussent bien approvisionnés et bien équipés.

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[1] Arch. nat., U, 754, f°s 52-53.

[2] Harrisse, p. 253.

[3] Harrisse, pp. 258-264.

L'année 1540 se passa ainsi dans des atermoiements qui ne semblèrent pas améliorer la situation.

Durant l'hiver Roberval parcourut la Champagne et la Normandie afin d'y acheter de l'artillerie, de la poudre et autres munitions. Cependant, lorsque l'heure fixée pour le départ, le 15 avril, vint à sonner, Roberval était encore plongé dans des embarras multiples, allant à droite et à gauche pour se procurer des armes et des provisions de bouche.

Le 10 avril il n'avait pas encore de navires. Ce ne fut que le 8 mai qu'il réussit à affréter à Saint-Malo la *Marie*, du port de quatre-vingts à cent tonneaux, dont les propriétaires s'appelaient Pierre Guehemenc, Jehan Pepin et Jehan Eberard, l'aîné. Au mois d'août, la *Marie* était ancrée dans la rade de Honfleur.

Le 19 juin, Roberval réussit à passer un contrat avec Simon Harel, maître de la *Valentine*, du port de quatre-vingt-douze tonneaux, et avec Jehan Mallet, maître de la *Sainte-Anne*, du port de quatre-vingts tonneaux, toutes deux destinées à faire la traversée de l'Atlantique avec la *Marie*.

Le naulage comportait plusieurs conditions :

1° Les maîtres auront de fret, suivant l'ordonnance du seigneur de Fosseulx, lieutenant pour le roi en sa marine de France, 40 sous par tonneau, sur quoi une avance leur sera faite, avant le départ, de trois mois de fret ; le surplus devant leur être remboursé au retour du voyage de Roberval ;

2° Alonce de Cyville devra faire ces paiements au nom de Roberval, en la ville de Rouen ;

3° Harel et Mallet devront recevoir chacun 30 écus soleil pour aller recueillir des marins le long de la Seine ;

4° Les gens de l'équipage devront recevoir : chaque maître, par mois, 22 livres 10 sous ; le contre-maître, 11 livres 5 sous tournois ; le maître varlet, 7 livres 10 sous ; le charpentier, 7 livres 10 sous ; le reste de l'équipage, chacun 100 sous tournois par mois, avec une avance de trois mois ;

5° Enfin il fut stipulé qu'après le congé donné aux maîtres et marins par le seigneur de Roberval à la côte de Terre-Neuve, chacun d'eux aurait le tiers de tout ce qu'il pourrait acquérir par le trafic avec les sauvages.

La charte-partie fut dressée par devant Raoulin Le Gracieux et Jacques Guéroult, notaires à Honfleur, en présence de Martin Chambon, commissaire de l'artillerie du roi en sa marine de France, et Etienne Lelou, tous deux citoyens de Honfleur.

Il semble qu'après avoir pu se procurer ces trois navires, Roberval aurait dû mettre à la voile et se hâter de courir en Amérique. Mais l'infortuné vice-roi connut encore de nouveaux déboires. Les propriétaires de la *Valentine* préféraient maintenant la vendre que la louer. Roberval dut en passer par là, et il chargea Alonce de Cyville de surveiller les

négociations. Simon Harel, Pierre Le Cordier, Philippe Levesque, Robert Convart et Pierre Turterel, tous propriétaires pour un quart ou un demi-quart, consentirent à la vente de la *Valentine* avec ses agrès, apparaux, victuailles, etc., etc., moyennant 4,500 livres tournois, payables par moitié le 1er mars 1542 et le 1er mai suivant. Le contrat de vente fut passé, le 14 août 1541, devant les notaires Raoulin Le Gracieux et Etienne Lelou.

Le 18 août, Roberval écrivait de Honfleur qu'il partirait pour les terres neuves dans quatre jours. Ce départ eut-il réellement lieu, comme on l'a dit et comme je l'ai écrit moi-même sur la foi des autres, dans un ouvrage paru en 1891 ? Roberval était encore présent à Honfleur le 30 août, et lui-même nous apprend dans ses lettres de grâce accordées à Paul d'Auxilhon, capitaine d'un de ses vaisseaux nommé *Canne*, qu'il était en France le jour de Noël 1541. S'il partit pour l'Amérique, disons le 31 août, ce voyage n'aurait pas duré tout à fait quatre mois. Or, Jacques Cartier avait mis quatre mois et demi à accomplir son premier voyage au Canada, et il s'était attardé en maints endroits.

Voici ce que j'écrivais en 1891 au sujet des voyages de Roberval :

" Cartier et Roberval avaient décidé de passer au Canada dès le printemps de 1541. Ce dernier n'étant pas suffisamment préparé à l'époque convenue (15 avril), son pilote (Cartier) reçut l'ordre de prendre les devants et de choisir le lieu qu'il jugerait le plus propice à un établissement. Trois mois plus tard, Roberval partit à son tour, mais comme la saison était déjà avancée, il ne jugea pas prudent de remonter le fleuve, et il explora le Cap-Breton et les pays adjacents. C'est ce qui explique la persistance des historiens à vouloir le faire se fortifier au Cap-Breton. Repassé en France, où il arriva vers le 25 décembre, il y fit la rencontre de Noël et de Jalobert, que Cartier avait renvoyés pour obtenir des secours et aussi pour s'informer si Roberval irait le rejoindre à Charlesbourg-Royal. L'on s'adressa au roi afin d'obtenir du renfort pour la colonie, et celui-ci en effet chargeait Paul d'Auxilhon, sieur de Senneterre, de ravitailler deux navires pour le Canada. De son côté, Roberval terminait ses préparatifs de l'année précédente, recrutait ses marins, et au printemps de 1542, il quittait de nouveau la France, mais, cette fois, avec l'intention de se rendre au poste occupé par Cartier depuis près d'une année. On sait le reste. A Terre-Neuve il fit la rencontre de Cartier, et il poursuivit sa route jusqu'à Charlesbourg-Royal

" D'où il suit que Roberval fit deux voyages au Canada, l'un en 1541 et l'autre en 1542. Cette opinion est assez conforme au témoignage de Bergeron. La plupart des historiens s'accordent aussi sur le nombre de ces voyages, mais ils placent le deuxième en 1549. Harrisse est d'opinion que Roberval partit le 22 août 1541 et resta en Canada jusqu'en mai 1544. Le savant historien fait évidemment erreur, car il est parfaitement constaté que Roberval était en France à la fin de l'année 1541. Nous voyons par une lettre du roi, en date du 26 janvier 1542, adressée à Paul

d'Auxilhon, qu'il lui donnait autorité pour ravitailler deux navires, afin d'aider Roberval *de vivres et autres choses dont il a très grand besoin et nécessité ainsi qu'avons entendu ès terres du Canada qu'il est allé déjà découvrir.* Cette lettre laisse voir assez clairement que Roberval avait fait un premier voyage en Amérique."

Quoi qu'il en soit, le sieur de La Rocque partit pour le Canada, le 6 avril 1542, avec trois navires qui cinglèrent de La Rochelle et arrivèrent à Charlesbourg-Royal vers le milieu de juillet. Il y demeura jusqu'à l'automne de l'année suivante. On le retrouve en France au commencement d'avril 1544, alors que fut agitée entre lui et son pilote Jacques Cartier la question des sommes d'argent dépensées pour l'expédition.

IV

Qu'advint-il ensuite du premier vice-roi du Canada ?

Absolument ruiné, Roberval ne dut plus songer à retourner à Charlesbourg-Royal.

En 1544, François Ier lui fit transmettre une commission pour faire construire des fortifications à Senlis.[1]

En vertu de lettres patentes données à Lyon le 30 septembre 1548, Henri II lui concéda toutes les mines de France pour une période de neuf années, à condition qu'il en ouvrirait au moins trente. Dès lors Roberval s'intitula maître, gouverneur général et surintendant des mines et minières de France. Ce vaste privilège n'enrichit pas le gentilhomme pauvre.[2]

En 1557 il travaillait aux fortifications de Paris.

Roberval vivait encore à la date du 30 avril 1560. Mais, le 10 février 1561 il n'existait plus, car on constate qu'à cette date, Louis de Magdaillan présentait une requête au parlement en sa qualité " de tuteur et curateur ordonné par justice à François de Magdaillan, héritier par bénéfice d'inventaire de feu François de La Rocque, son oncle ".

Roberval mourut donc vers la fin de l'année 1560 ou au commencement de 1561, à l'âge de soixante ans, après s'être vu enlevé à tour de rôle tous ses domaines, terres ou seigneuries. Pour comble de malheur, on croit qu'il fut assassiné nuitamment, près le charnier des Innocents. Personne n'a contredit le témoignage de Thévet sous ce rapport.

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[1] Flammermont, *Hist. des Institutions municipales de Senlis*, 1881, p. 128.
[2] *Bulletin de la Société des Antiquaires de France*, t. XXXI, p. 115.

IV—*Samuel de Champlain,*

Par M. L'ABBÉ HOSPICE VERREAU, docteur ès lettres.

(Lu le 25 mai 1899.)

I

Champlain, qui a pris la particule *de* assez tard, y avait-il droit ?

Oui, sans aucun doute.

Il s'en est abstenu tant qu'il n'y a pas eu droit ; mais devenu possesseur de la terre de Champlain, à la mort de son père, il a indiqué cette possession en se disant *Sieur de Champlain.*

Je tâche de donner des preuves.

II

Le fondateur de Québec, était-il noble, annobli ou roturier ?

Je conclus qu'il a été *au moins* annobli.

Cette conclusion est tirée des lois et des usages de l'époque, ainsi que des contrats, actes, commissions qui concernent Champlain.

On sait qu'en France, la noblesse s'acquérait de sept manières, entre autres par la possession, pendant quelques générations, *d'offices ou de charges nobles.*

Or, on considérait comme tels les offices qui donnaient au titulaire le droit de se qualifier de *chevalier*, d'*écuyer*, de *noble homme.*

Loyseau (*Des Ordres de la Noblesse*) désigne quelques-unes de ces charges, *v. g.* celle de *maréchal des logis*, de *gouverneur* de ville.

Champlain peut encore prétendre à la noblesse *graduelle*, ou noblesse *a patre et avo.*

L'usage et les lois avaient établi que lorsque l'aïeul et le père avaient successivement possédé un office noble, le petit-fils avait, en raison de cette possession, acquis la noblesse qu'il pouvait désormais transmettre à ses descendants.

Après avoir étudié et développé ces différents points, je passe à l'examen des actes et des commissions qui concernent Champlain et je tire la conclusion que j'ai indiquée plus haut.

V—*La Chevrette,*

Par M. GONZALVE DESAULNIERS.

(Présenté par M. Louis Fréchette et lu le 25 mai 1899.)

Ce n'était pas le jour tout à fait, mais déjà,
Sur le mont chevelu qui de l'ombre émergea,
Flottaient des ondes d'or par l'aube charriées.
Un long frémissement courait dans les feuillées,
Prélude vague encor des concerts infinis
Qui vont monter bientôt, des sources et des nids.
Les premiers rais, glissant sur les chênes énormes,
Sur les sapins, sur les mélèzes, sur les ormes,
Perlaient en fine pluie aux flancs des brouillards lourds.
L'air était caressant comme un doigt de velours ;
Et la forêt, encor bercée aux frais murmures
Que soulève, la nuit, la houle des ramures,
Tournait vers le soleil, que tout fait pressentir,
Sa masse sombre où les rayons vont s'engloutir.

Tout s'éveillait ; l'oiseau venait mouiller sa plume
Aux cascades du roc qui se frange d'écume ;
L'écureuil sautillait sur le hêtre touffu ;
Et comme pour narguer les chasseurs à l'affût,
Les chevreuils, orgueilleux de leurs hautes statures,
Frappaient du pied le sol foulé des abattures.

Tous les bruits de la terre et tous les chants du ciel
Se confondaient en un rythme torrentiel.

Ce matin-là, j'avais, chassant sur les lisières
Qui bordent les vallons, les lacs et les rivières,
Accompagné d'un guide et d'un grand lévrier,
Forcé plus d'un renard au fond de son terrier ;
Et mon arme tonnant dans les feuilles verdies
Allumait sous le bois des lueurs d'incendies ;
Quand tout à coup, dans un subit écartement
De branches, j'aperçus en un recul charmant
Une chevrette, par les fraîcheurs attirée,
Qui d'un lac, en nageant, coupait l'onde moirée.

Elle venait, trop jeune encor pour redouter
Les embûches des bois où les siens vont brouter,
Déroulant sur le flot des courbes gracieuses
Où se brisait l'image éparse des yeuses.
Vivement j'épaulai mon fusil, tout joyeux
De ravir cette proie aux déserts giboyeux ;
Mais, au moment d'en faire éclater les amorces,
Je vis mon guide, un vieil Indien aux jambes torses,
A la face bronzée et dont les pas pesants
Cheminaient sans repos depuis quatre-vingts ans,
Du revers de la main s'essuyer la paupière.
Son geste avait la douce et muette prière
Des petits dont les yeux mieux que la voix souvent
Traduisent les désirs de leur âme d'enfant.
Pourquoi ce pleur discret ? quelle ombre, de son aile,
Vint un instant voiler l'éclat de sa prunelle ?
Est-ce que, par un flot de jeunesse envahi,
L'instinct farouche en lui dormant s'était trahi,
Venu des profondeurs intimes de son être ?
Avait-il évoqué du fond des bois, peut-être,
Au galop furieux d'orignaux emportés,
De ses chasses d'antan les âcres voluptés ?
Je le crus, car au lieu de lâcher la détente
Sur le beau lac voilé de lumière hésitante,
Je lui tendis mon arme et je lui dis, confus :

— Pardon, mon vieil ami, j'oubliais que tu fus
Jadis, sous ces grands pins que le colon terrasse,
Le plus hardi parmi les chasseurs de ta race ;
A toi le coup, mon brave, et frappe au bon endroit.

Mais lui, me repoussant, grave, le torse droit,
D'un accent où perçaient ses révoltes naïves :

— Frère, dit-il, as-tu, dans tes heures oisives,
Quand octobre met aux arbres des tons rougis,
Vu, du sommet des monts, les brouillards élargis
En une toile immense au-dessus des vallées ?
Les visions d'en bas par eux étaient troublées,
Et ton œil, à travers leur confuse blancheur,
Ne pouvait distinguer les toits du défricheur.
Mais sitôt que le jour, roulant des hautes cimes,

Dardait ses flèches d'or au penchant des abîmes,
Tous ses brouillards, soudain dans l'air évanouis,
Ouvraient des pans d'azur aux vallons éblouis.
Frère, mon âme ainsi, par mes instincts trompée,
D'une brume aussi dense était enveloppée ;
La nuit sombre s'était faite en elle, et pourtant
Il a suffi d'un jour, d'une heure, d'un instant
Pour l'éclairer, ainsi qu'on voit après la pluie,
Briller la feuille au bout d'un rayon qui l'essuie.
Lorsque j'ai vu, tantôt, surgir dans les embruns,
Et faisant miroiter sa fourrure aux poils bruns,
La chevrette trouant la lumière ravie,
Un souvenir venu des lointains de ma vie
S'est devant moi dressé tout à coup, étreignant
Mon vieux cœur bourrelé par un remords poignant.

Et le vieillard, prenant dans ses deux mains sa tête,
Courbé comme un roseau sous un vol de tempête,
Pleura ; puis, reprenant son langage imagé :

— Non, non, tu te méprends lorsque tu crois que j'ai,
Malgré mon front qui ploie et mon bras qui vacille,
A l'âpre appel des bois toujours l'âme docile.
Frère, bien des soleils sur les arbres penchés
Ont bu l'eau des torrents par leurs feux desséchés ;
Bien des feuilles, ces pleurs que la montagne verse
Quand un rayon pâli d'automne la traverse,
Ont, dans le tourbillon des souffles déchaînés,
Jonché le sol boueux de leurs lobes fanés,
Depuis le jour où j'ai, dans mes deux mains robustes,
Comme la pince d'un chevreau rompt les arbustes,
Brisé mon arc et fait pour la dernière fois,
Un trou sanglant aux flancs des bêtes aux abois.
Tu veux savoir pourquoi tout mon être tressaille
Au triste souvenir qui de si loin l'assaille ?
Ecoute : En ces temps-là j'étais le fier chasseur
Pour qui toute forêt pleine d'ombre était sœur ;
Les horizons pour moi n'avaient jamais de borne ;
Que sur les monts le ciel fût souriant ou morne,
Qu'il tombât des rayons d'aurore ou de midi,
Que l'été, caressant le coteau reverdi,
Jetât sa floraison mystérieuse aux branches,

Ou que l'hiver, croulant en lourdes avalanches,
Scalpât les pins au fond des gorges s'effondrant,
Toujours j'allais, par les sentiers, indifférent
Aux durs combats que se livraient sur mon épaule
Les haleines du sud et les bises du pôle.
Or, un jour, au retour de mes chasses, du fond
D'un ravin, d'où l'écho des forêts nous répond,
Je vis—comme tantôt, frère, nous aperçûmes
Cette pauvre chevrette émergeant de ses brumes—
Je vis, dressant l'oreille aux chansons des ruisseaux
Qui glissent par les prés ou sous les verts arceaux,
Sur un lac qu'enlaçait la ceinture des herbes,
Un grand chevreuil aux bois ruisselants et superbes ;
Son poitrail labourait les eaux ; à chaque bond
Que faisait ce farouche et fauve vagabond
Le lac élargissait derrière lui ses grèves.
Jamais, même aux plus fiers caprices de mes rêves,
Sous le soleil dans le crépuscule décru,
Plus splendide animal ne m'était apparu.
Il mariait dans ses allures souveraines
La souplesse des joncs à la force des chênes.
Ah ! frère, ayons pitié des bêtes de nos bois ;
Sachons faire, dans nos hécatombes, le choix
Entre le loup féroce et le chevreuil agile.
Ayons la faim et non le plaisir pour mobile !
Vois-tu, les bons esprits nous trompent quelquefois :
Je revenais de loin, n'ayant dans mon carquois
Qu'une flèche, peut-être à dessein oubliée ;
Je rentrais au wigwam fait d'écorce liée,
Courbé sous le fardeau de peaux d'ours et d'élans
Qui depuis le matin faisaient mes pas plus lents,
Ayant, pour la saison des frimas et des givres,
Ample provision de poil fauve et de vivres.
Hélas ! pourquoi l'instinct mauvais qui veille en moi,
Et dont j'ai peine encore à refouler l'émoi,
Se fit-il ce jour-là plus cruel ? Je l'ignore.
Mais quand le grand chevreuil au bramement sonore
Se détacha du flot alangui du lac clair,
Ma flèche tout à coup partit comme l'éclair
Et courut s'enfoncer dans sa chair frémissante.
La bête se cabra sous l'atteinte cuisante

Du trait mortel, bondit hors du lac, en laissant
Sur la nappe d'eau bleue un long filet de sang,
Et, comme si la mort déjà l'eût aveuglée,
Revint, par les détours d'une course affolée,
A quelques pas de moi s'abattre lourdement.
La vie à chaque brusque et court halètement
Qui secouait sa forte et massive carrure
Coulait avec le sang de l'horrible blessure.
Alors, frère, une chose étrange se passa.
L'œil mourant du chevreuil sur le mien se fixa,
Si doux, dans l'ombre, hélas ! du cil qui se rapproche,
Si triste et si rempli d'un douloureux reproche
Qu'il me sembla l'ouïr me parler. Ce qu'il dit,
Mon âme mieux que mon oreille l'entendit ;
C'étaient comme les voix qu'échangent, sur la grève,
Les roseaux frémissants sous l'orage qui crève.
Voix profondes, cachant des accents résignés.
Ils me disaient, ces yeux déjà d'ombre baignés :
" Quoi ! c'est toi qui lanças la flèche qui me tue ?
C'est par toi que la mort sur moi s'est abattue
Et déchire mes chairs de ses ongles hideux
Pourtant, ne sommes-nous pas frères tous les deux ?
Frères par les forêts dont les sources bénies
Nous bercent chaque soir des mêmes harmonies ?
Frères par les chemins que nous avons foulés,
Dans ces bois où mes pas aux tiens se sont mêlés ?
Par les neiges qui sous leurs épaisseurs si douces
Nous gardent pour les froids, des faînes et des mousses ?
Voyons, regarde-moi : ne suis-je pas celui
Qui donne par moment aux forêts d'aujourd'hui
De celles d'autrefois l'illusion suprême ?
Pourquoi me frappes-tu, moi qui comme toi-même,
Dans ces bois que demain les blancs envahiront,
Prolonge vainement des races qui s'en vont ? "

Et comme s'il eût vu déjà par la pensée
Le remords poindre au fond de mon âme blessée,
Le beau chevreuil tourna vers le Couchant ses yeux
Où se réfléchissait la grande paix des cieux,
Et, morne, s'en alla vers les pays du rêve.

Mon vieux guide se tut, sa voix grave fit trève ;

Mais son œil assombri, redevenu songeur,
Semblait suivre, dans l'air qu'emplit de sa rougeur
Le soleil dominant les collines dorées,
De quelque vision les formes éthérées.

— Allons, repris-je, ému malgré moi, remettons,
Mon brave, le fusil sur l'épaule, et partons.
Le jour monte, et bien long est le sentier qui rampe
A travers bois jusqu'à la clairière où je campe.

Alors, il me saisit les mains et m'entraînant
Au bord du lac d'où la chevrette, maintenant,
Comme si quelque bruit eût frappé ses oreilles,
Légère, s'élançait sous les branches vermeilles,
Il me dit, le regard soudain illuminé :

— Merci, frère, les bois m'ont enfin pardonné !

V—*Une Page sombre de notre Histoire—L'Expédition du Marquis de Denonville,*

Par M. LE JUGE GIROUARD.

(Présenté par M. DeCelles et lu le 25 mai 1899.)

Un arrière-petit-fils du marquis de Denonville, gouverneur général du Canada de 1685 à 1689, m'écrivait l'autre jour qu'il était à préparer l'histoire de l'administration de son ancêtre, et il me priait de lui envoyer un exemplaire de mon *Lake St. Louis.* En parcourant quelques volumes de la *Correspondance générale*[1] déposés aux Archives du Canada depuis que mon livre a été publié, j'y ai trouvé des documents inédits qui jettent un jour nouveau sur cette page sombre de notre histoire. Je serais heureux si, en présence des nouvelles pièces que je produis, il pouvait les interpréter autrement que je l'ai fait.

Sur le témoignage de Gédéon de Catalogne,[2] témoin oculaire, j'ai dit dans mon *Lake St. Louis* que le marquis de Denonville s'était rendu coupable d'une supercherie sans nom à l'égard des Iroquois, qu'il avait fait inviter à un grand festin au fort Frontenac, à Cataracouy (Kingston, de nos jours), pendant l'été de 1687, dans le but de conclure une paix générale. Je ne sais si le festin fut donné, mais il est certain qu'un certain nombre d'invités se rendirent au fort, attendant M. de Denonville et l'intendant Champigny, envoyé d'avance pour exécuter ses ordres, avec l'aide d'une escorte de trente hommes. "Chemin faisant, dit Catalogne, tous les Iroquois qu'il trouva en route il les invita à un festin qu'il allait faire audit fort. Ceux qui étaient cabanez autour de ce poste, y furent

[1] La *Correspondance générale* fait partie des archives nationales à Paris et se compose de plusieurs séries ; celles qui ont rapport au Canada sont connues sous les désignations de "Série C 11", laquelle comprend les documents reçus à Paris du Canada, et de "Série B", formée de la correspondance envoyée de Paris aux colonies. Une bonne partie de la première série a été copiée et se trouve dans les archives du Canada à Ottawa, dont M. Douglas Brymner est le savant conservateur depuis l'établissement du bureau, en 1872. Tous les volumes en sont disposés dans un ordre parfait, mais il est regrettable que le plus grand nombre soient sans table des matières. La série B et des milliers de documents conservés dans les archives de Paris et dans celles des grandes villes d'Europe sont encore à dépouiller et à copier. En 1897, un premier volume de la collection Moreau Saint-Méry arriva à Ottawa. M. Edouard Richard, l'auteur d'*Acadia*, chercheur infatigable, est tout spécialement chargé des archives de Paris, en remplacement du regretté Joseph Marmette.

[2] Il signait "Catalongne" tout court : greffe de Bourgine, 7 novembre 1685 ; greffe d'Adhémar, 23 février 1699 ; *Vieux Lachine*, 25 ; *Lake St. Louis*, 66; Mémoire sur les seigneuries, col. Moreau Saint-Méry, aux Archives du Canada, p. 173. Presque tous les mémoires du temps et ses descendants écrivent "Gédéon De (ou de) Catalogne" : *Mém. de la Société royale*, 1re série, II, 7 ; *Jug. et Dél.*, IV, 370, 375, 471 *Ibid.*, VI, 1015.

invitez aussy. Pendant ce tems là, il y avoit des charpentiers qui disposoient de pièces de bois par couché pour mettre tous les convives.

"Le jour estant arrivé pour le festin, tous les convives furent arrestez et comme il n'y avoit pas de logement pour servir de prison, on les mit au nombre de 95 hommes, un sept (ceps) au pied", etc., c'est-à-dire qu'ils furent tous faits prisonniers. (*Collection de M^es*, I, 599.[1])

Ce coup fait, l'intendant repartait pour Montréal. En route, au-dessus de tous les rapides, il fit la rencontre du gouverneur général qui montait à la tête d'une armée de plus de deux mille hommes,[2] formée de 832 réguliers, 930 miliciens, 300 Sauvages et 100 hommes pour le service de 200 bateaux plats et d'un pareil nombre de canots d'écorce. (*Cor. gén.*, IX, 52; *Ibid.*, XI, 153.) Il était accompagné d'un état-major brillant et de plusieurs seigneurs et notables du pays: entre autres, le chevalier Hector de Callières, gouverneur de Montréal, le chevalier Philippe de Rigaud de Vaudreuil, commandant des troupes du roi et arrivant de France,[3] plus tard marquis et gouverneur général, le baron de Lahontan, Charles Le Moyne de Longueuil, plus tard premier baron de Longueuil, Le Moyne de Sainte-Hélène, Portneuf, fils du baron de Bécancourt, Fleutelot de Romprey, Saint-Cirq, le chevalier de Troyes, le chevalier de Baugy, aide de camp, Valrennes, l'abbé de Belmont, Berthier, Desmeloizes, La Valtrie, Granville, Claude de Ramesay, commandant de la milice et plus tard gouverneur de Trois-Rivières puis de Montréal, Le Gardeur de Repentigny, Aubert de La Chesnaye, Louvigny, Le Ber de Saint-Paul, Dupuy, Sidrac Dugué de Boisbriant et Gédéon de Catalogne. Plus tard, cette armée fut grossie de près de cent soixante et dix Français et quatre cents Sauvages, leurs alliés, descendus exprès des Pays d'en haut, sous le commandement d'Olivier Morel de La Durantaye, de La Forest, de Greyselon du Lhut, du chevalier Henri de Tonty, de Jacques Bourdon d'Autray et de Nicolas Perrot. (*Collection de M^es*, I, 560; *Cor. gén.*, IX, 42, 53, 57, 87, 88, 97, 112, 179; *Jug. et Dél.*, III, 249.)

Catalogne, continuant sa relation, ajoute: "L'armée ainsy disposée partit de Montréal à la fin, arrivant à la Galette[4] qui est le haut de tous les rapides. Nous y rencontrasmes monsieur de Champigny qui rendit compte à monsieur le marquis de Denonville de l'expédition qu'il venait

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[1] Publiée sous les auspices de la législature de Québec en 1883. La collection Moreau Saint-Méry, aux Archives du Canada, contient ce mémoire.

[2] Un mémoire du temps élève ce chiffre à 3,000 hommes. (*Cor. gén.*, XI, 153.)

[3] Il arriva au Canada en mai 1687 avec huit cents recrues, qui furent laissées en arrière pour protéger les postes. Margry et Belmont disent "quinze cents hommes" (Vol. V, Introd., p. xxxv); Parkman: "huit cents réguliers" (*Frontenac*, éd. 1893, p. 144; *Hist. du Canada*, 20). M. de Denonville écrit au ministre qu'il a reçu "huit cents recrues" (*Cor. gén.*, IX, 166). En janvier 1687, il avait demandé quinze cents vétérans (*Ibid.*, 311). La traversée de M. de Vaudreuil fut faite en trente-trois jours, la plus courte qui se fût vue. Lahontan, toujours à l'exagération, affirme qu'elle fut faite en vingt-huit jours.

[4] Prescott, de nos jours.

de faire et continua sa route vers Montréal et nous nous rendismes trois jours aprez au Fort de Frontenac ; aussytost arrivez, nous fîmes un destachement qui, avec les canots qui convoyoient les vivres, menèrent les Iroquois dans les prisons de Québec." (*Col. de M^ss*, I, 559, 560.)

Quarante d'entre eux furent expédiés aux galères de France, où plusieurs périrent de misère, malgré les soins et attentions des autorités. A l'automne de 1689, les survivants, au nombre de vingt environ,[1] et nommément le grand chef Oréaoué—le même qui par la suite devint l'ami des Français—furent renvoyés au pays avec le comte de Frontenac, qui venait y remplacer le marquis de Denonville.

Le 16 novembre 1689, M. de Champigny écrit au ministre que trois prisonniers des galères sont dans leur pays et que les autres sont aussi arrivés au Canada.[2] (*Cor. gén.*, X, 393.)

Le témoignage de M. de Catalogne—non signé et transmis plus de vingt-cinq ans après l'événement, probablement pour éviter les coups de hauts personnages—établit que la première arrestation des Iroquois, cabanés autour du fort Frontenac, fut faite par l'intendant Champigny. Mais a-t-il agi de son chef ou d'après les ordres du gouverneur?

Margry et Parkman supposent que l'intendant Champigny fut le grand coupable et que le tort du gouverneur fut d'avoir ratifié son acte perfide et d'en avoir profité. Parlant de l'expédition de M. de Denonville, Margry dit, dans son Introduction au tome V de ses *Mémoires et Documents*, p. XXXVI : "M. de Champigny, pour que la marche des troupes ne fût pas connue, s'était avisé d'un triste moyen. Précédant l'armée à Montréal, puis au fort de Cataracouy, il avait, chemin faisant, invité tous les Iroquois qu'il rencontrait à un festin qu'il devait donner dans ce fort. Il y invita de même les Sauvages, cabanés aux environs de ce poste." Puis l'éminent historien cite le témoignage (reproduit plus haut) d'un témoin oculaire, qu'il ne nomme pas mais que l'on sait aujourd'hui être Gédéon de Catalogne ; et il ajoute : "Après cette belle équipée, M. de Champigny repartait pour Montréal, d'où il envoyait en France, aux galères, les malheureux qui avaient cru pouvoir se confier à sa parole."

Catalogne ne dit pas que ce fut M. de Champigny qui expédia les prisonniers à Québec et de là aux galères de France ; il affirme, au contraire, que ce transport fut fait par M. de Denonville après son arrivée au fort Frontenac. Il n'en trouva pas le nombre assez considérable, car d'après Catalogne (*Col. de M^ss*, I, 560) il envoya un détachement de voyageurs, sous le commandement du sieur Péré, pour saisir, au nord du

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[1] Catalogne dit "trois", et le P. de Lamberville, "treize". Le rôle des Iroquois envoyés à Rochefort en 1689, évidemment pour faire la traversée, donne les noms de vingt et un Iroquois. (*Col. de M^ss*, I, 454, 572 ; *Rochemonteix*, III, 615.)

[2] Ces trois Iroquois, dont l'un était Oréaoué, débarquaient du *Saint-François-Xavier*, à Québec, le 12 octobre 1689, avec le comte de Frontenac. Les autres arrivèrent quelques jours après. (Margry, V, p. XLIX ; *Cor. Gén.*, X, 393.)

lac Ontario, tous les Iroquois qu'ils rencontreraient à 25 lieues du fort [1]. Ils y furent amenés prisonniers et de là expédiés aux galères de France durant le séjour du gouverneur au fort. (*Col. de M^r*, I, 560 ; *Cor. gén.*, IX, 99.)

En 1688, Mgr de Saint-Vallier publiait à Paris un mémoire sur *l'Estat présent de l'Eglise en la Nouvelle-France*, etc., dans lequel il dit que M. de Denonville "s'assura sans peine à Kataracouy de près de deux cents personnes de la même nation (iroquoise) qui auroient pu fortifier les ennemis, s'ils eussent la liberté de les aller joindre et qui pourroient dans la suite nous servir d'otages pour la sûreté des prisonniers qu'on ferait sur nous". Mgr de Saint-Vallier ne soupçonne même pas qu'au moment où il écrivait ces lignes, le plus grand nombre des prisonniers iroquois, saisis à Cataracouy, étaient aux galères de France. Il faut ajouter que le prélat fit sa relation de l'expédition de M. de Denonville sur des lettres reçues pendant son séjour à Paris. Il était parti du Canada le 18 novembre 1686 et arrivé en France le 1er janvier 1687, "après, dit-il, une traversée très orageuse". Il était de retour à Québec le 8 août 1688.

Ces atrocités étaient commises sous les yeux des hauts fonctionnaires, des nobles et des notables qui accompagnaient M. de Denonville, sans qu'ils parussent s'en émouvoir. Probablement qu'ils avaient raison de le croire autorisé de ses supérieurs à en agir ainsi. C'est ce que l'on verra bientôt.

L'abbé de Belmont, prêtre de Saint-Sulpice, missionnaire des Sauvages de la montagne de Montréal et un des assistants, nous dit à la page 20 de son *Histoire du Canada*, qu' "en verité cela faisait pitié que des sauvages qui estoient comme sous notre protection fussent ainsi pris, pillés et enchaînez, et pris par l'appât d'un festin ; ce qui fut de pis, c'est : 1° qu'on envoya les hommes à la fin de la campagne aux galères en France ; 2° que la plus part des femmes et enfans moururent de tristesse et de la maladie pestilentielle qui se mit dans l'habitation". Mais cette sympathie toute naturelle n'alla point jusqu'à une désapprobation publique ou générale.

Lahontan est le seul témoin oculaire qui parle d'intervention ouverte en faveur de ces malheureux, mais d'après son propre récit, elle ne dépassa pas son action individuelle. Il commence par affirmer "qu'ils ne méritoient rien moins que le traitement qu'on leur fit" ; puis il dit qu'il frémit à la vue "des jeunes sauvages de notre parti brûler leurs doigts à petit feu dans des pipes allumées", jusqu'au point "que je pensai les roüer de coups de bâton". Il ajoute qu'il faillit être fusillé sur le champ par les Sauvages alliés qui coururent aux armes. Il en fut quitte "pour une mercuriale et pour quatre ou cinq jours d'arrêt dans ma tente". Je crois

[1] Lahontan ne dit rien de l'arrestation des Iroquois cabanés autour du fort, attendant l'arrivée de M. de Denonville, et il affirme que celle des Iroquois à leurs villages, au nord du lac Ontario, fut faite par Champigny (t. I, p. 93). Il se trompe —ce que constatent non seulement la relation de Catalogne, mais presque tous les mémoires du temps, même ceux de M. de Denonville, comme on le verra ci-après.

que cette fois, comme trop souvent d'ailleurs c'est du roman et non de l'histoire que Lahontan écrivait.[1] Il connaissait trop bien la nature et les coutumes des sauvages pour exposer sa peau d'une façon aussi provocante. Il est même surprenant que les alliés n'aient pas dévoré quelques-uns de leurs ennemis, ce qui s'est vu en plus d'une pareille occasion, à la face même des Européens, français ou anglais, qui ne pouvaient empêcher ces atrocités.

Le témoignage de Monseignat,[2] secrétaire de M. de Frontenac, écrit en 1690, est aussi positif que celui de Catalogne. Parlant du grand chef Oréaoué,[3] il dit : "Il estoit fort considéré parmy ses gens, et ce fut soubs prétexte de paix et de festin d'alliance (qui est la manière dont on traitte les affaires avec eulx), qu'ils furent attirés au fort Frontenac et pris prisonniers avec quarante aultres de ses gens, par l'ordre de monsieur de Denonville. Il les a faict passer en France *comme vous l'avez su*, et ils seroient encore aux galères sy le Roy n'avoit jugé à propos de les renvoyer icy avec monsieur le comte, *la trahison qu'il leur avoit esté faicte n'estant nullement de son goust.*" [4] (*Col. de M^ss*, I, 485.)

Monseignat ne dit pas comment la nouvelle de cette perfidie arriva en France. A tout événement, ce prompt rapatriement des Iroquois fait honneur à la vieille France, coupable ou non. Les Acadiens déportés—avec ou sans la participation de la Grande-Bretagne, nous ne voulons pas examiner ce point contesté de l'histoire de l'Acadie [5]—ne furent pas traités aussi justement. La réparation se fait encore attendre. Elle viendra ; et ce sera de la Nouvelle-Ecosse, qui non seulement prononça et exécuta l'arrêt de leur dispersion, mais profita des nombreuses confiscations de biens meubles et immeubles qui la suivirent.

Monseignat a-t-il dit toute la vérité ? La cour de France a-t-elle connu les circonstances principales de l'arrestation et de la déportation des Iroquois ? M. de Denonville avait-il reçu quelques instructions de ses supérieurs à cet égard ?

Notons d'abord que lorsque le roi renvoie les Iroquois au Canada, il n'exprime aucune désapprobation de la conduite de M. de Denonville. Sa Majesté déclare que c'est " sur la demande qu'en a faict monsieur de Denonville ". (*Col. de M^ss*, I, 447.) Enfin, lorsque le 31 mai 1689, elle

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[1] Lemaire, missionnaire à la Louisiane, écrivait le 15 janvier 1714 : " On regarde en ce pays, comme des contes faits à plaisir, ce qu'on lit dans le baron de LaHontan, de cette partie occidentale de la Louisiane." (Margry, VI, 185).

[2] Monseignat était au pays depuis plusieurs années. En 1680, il était commis de La Salle, gouverneur du fort Frontenac. (*Jug. et Dél.*, II, 368.)

[3] " Oréaoué ", d'après Margry, V, p. XLIX ; " Ouréhouaré ", selon Bibaud, *Panthéon*, 210, et " Ouréhaoué ", d'après Parkman, *Frontenac*, éd. 1893, p. 195 ; probablement le même qui apparaît au rôle des Iroquois sous le nom de " Jean-Baptiste Ariouez " (*Col. de M^ss*, I, 454).

[4] Les italiques ici et ailleurs sont de nous.

[5] Voir *The Story of the Acadian Deportation* by John O'Hagan ; *Le Courrier du Livre*, II, 275, 318 ; *Col. of the Nova Scotia Historical Society*, II, 131, 149, 150.

le rappelle du Canada, ce n'est pas pour l'humilier, comme l'affirme Parkman (*Frontenac*, éd. 1893, p. 158), mais "pour vous donner de l'employ dans mes armez, où je suis persuadé que vous me servirez avec la même application, le même zèle et le même succès que vous avez faict dans le passé".[1] (*Ibid.*, 451.)

Une des premières démarches de M. de Denonville, à son arrivée à Québec, fut de faire descendre le P. Jean de Lamberville, S.J. Ce dernier raconte dans une lettre du 23 janvier 1695, inédite jusqu'à ces dernières années, les instructions que le nouveau gouverneur lui donna : "Il me députa vers les Iroquois pour les inviter tous, en la personne de leur chef, à se trouver le printemps (1687) au rendez-vous qu'il marqua, pour y parler de la continuation de la paix et des moyens de la bien maintenir avec eux, et eux avec luy. On me dit d'engager la foy et la parole qu'on leur donnoit de leur seureté et liberté de venir à ce rendez-vous et de là de retourner chez eux."

A son retour chez les Iroquois, le P. de Lamberville assemble quarante des principaux chefs de toutes les bourgades de la confédération ; il leur transmet le message du gouverneur, ajoutant "qu'il (le gouverneur) était un homme incapable de manquer à sa parole, ni de tromper contre le droit des gens". (Rochemonteix, III, 613.)

M. de Denonville a écrit un journal de son expédition, envoyé en France en octobre 1687, lequel se trouve au tome IX de la *Correspondance générale*, pp. 112 et suivantes.[2] Il n'y dit pas un mot de la supercherie pratiquée au fort de Frontenac. On y lit cependant : "Ainsy tout l'esté dernier se passa en négociations[3] qu'ils conclurent par une résolution qui fut prise *qu'eux et nous* nous assemblerions à Cataracouy pour prendre des mesures pour parvenir à une paix générale." (p. 163.)

M. de Denonville continue : "Sur le soir (25 juin, au-dessus des rapides) nous eumes avis de Cataracouy par un canot envoyé de M. l'Intendant, qu'il avait arrestez tous les sauvages pour empescher qu'aucun d'eux ne portast aux ennemis des nouvelles de notre marche et qu'il y avait engagé les sauvages estant à Otoniata de l'aller trouver à Cataracouy où ils seront arrestez ainsy que les autres. . . .

"M. l'Intendant arriva à ce camp (à la Galette) revenant de Cataracouy . . . ; il nous apprit la manière dont il avait arrêté tous les Sauvages iroquois des environs du fort qui se trouvèrent au nombre de six vingt dont il y a trente hommes, le reste femmes et enfants. . . .

"Le 29 juin, nous eumes la joye de voir arriver le R. P. de Lamberville de la Compagnie de Jésus, missionnaire au village des Onontaguez,

[1] La guerre venait d'éclater entre la France et l'Angleterre.

[2] Ce volume n'est arrivé aux Archives du Canada qu'en 1896. Une copie de ce journal existe aux Archives de Québec depuis nombre d'années. Marshall en a publié une traduction dans ses *Historical Writings*, p. 144, et on la trouve aussi au tome IX des *N. Y. Col. Documents*, p. 358.

[3] Par l'entremise du père Jean de Lamberville.

que j'avois envoyé querir sous prétexte d'améner les considérables des Iroquois pour négocier avec eux sur le moyen de pacifier nos différends." (*Cor. gén.*, IX, 174.)

Enfin, M. de Denonville relate l'expédition du sieur Péré, lequel, assisté d'un détachement de quarante Canadiens sous le commandement de Repentigny et de Portneuf, tomba à l'improviste sur les villages iroquois situés au nord du lac Ontario, et il informe le ministre qu'il a pris dix-huit hommes et soixante-deux femmes et enfants, "formant en tout cinquante et un bons hommes et cent cinquante femmes et enfans". (*Ibid.*, 176–179.)

Le P. de Lamberville dit qu'il trouva deux cents prisonniers, tant hommes que femmes et enfants. Ils se recriérent, contre le traitement qu'on leur faisait subir et quelques-uns, qui avaient été en France, disaient qu'ils réclameraient justice et protection.

Le 8 mars 1688, le roi écrit à M. de Denonville : "Sa Majesté a envoyé les Iroquois que vous avez faict passer en France sur les galères, où j'ay donné les ordres nécessaires pour qu'ils ne manquent de rien, et il faut que *dans la continuation de cette guerre*, vous fassiez en sorte de faire le plus grand nombre de prisonniers que vous pourrez, estant certain que ces gens, qui sont vigoureux et accoutumez à la peine, peuvent servir sur les galères de Sa Majesté." (*Col. de M^ss*, I, 418.)

La même année, 1688, le ministre écrit à l'intendant des galères, à Marseille : "Le Roy a eu égard à ce qui luy a esté représenté que ces Iroquois ont besoing d'une nourriture plus forte que celle d'ordinaire, et Sa Majesté veut bien que vous les fassiez traiter de mesme que les nègres du Sénégal." (*Ibid.*, 426.)

Ces documents que j'ai déjà presque tous indiqués ailleurs,[1] prouvent simplement que la cour de France savait que le Canada avait déporté des Iroquois aux galères de France, mais rien ne montre qu'elle connût la ruse et la fraude commises au fort Frontenac.

A en juger par ces documents, l'on pourrait supposer que la cour de France avait raison de croire que les Iroquois expédiés par M. de Denonville étaient des prisonniers de guerre, et c'est aussi l'opinion de Parkman qui ne fait pas même mention de quelques-uns des documents cités plus bas. (*Frontenac*, éd. 1893, p. 140.)

Dès le 27 février 1688, Dongan, gouverneur de la Nouvelle-York demandait au marquis la remise des Iroquois prisonniers aux galères de France (*Cor. gén.*, X, 52). Le 24 septembre 1689, M. de Denonville écrivait que l'envoi des prisonniers en France avait beaucoup contribué à irriter les Iroquois contre les Français (*Ibid.*, 331). Il parlait en connaissance de cause, puisqu'il avait sous ses yeux le massacre de Lachine et tous les ravages des Iroquois sur tout le gouvernement de Montréal. Il est probable que la cour de France connaissait toutes les particularités

[1] *Lake St. Louis*, p. 116.

de l'expédition de M. de Denonville à l'automne de 1687, après le retour des vaisseaux qui portaient les prisonniers iroquois, car dès leur arrestation ils avaient annoncé qu'ils en appelleraient au roi. Mais auparavant, en 1687 et même 1686, ignorait-elle entièrement ce qui se passait ou se projetait au Canada ? Sa conduite et ses instructions au gouverneur ne la rendirent-elles pas en quelque sorte complice de son crime ?

La *Correspondance générale* que je viens de parcourir est plus précise et plus concluante.[1]

Le 31 juillet 1684, le roi écrit à M. de La Barre, le prédécesseur de M. de Denonville : " Je veux que vous fassiez tout ce qui sera possible pour en faire (des Iroquois) le plus grand nombre de prisonniers de guerre et que vous les fassiez embarquer par toutes les occasions qui se présenteront pour les faire passer en France sur les galères." (*Cor. gén.*, VI, 444.)[2]

L'intendant de Meulles écrit au ministre le 28 septembre 1685 : " M. de Denonville se met en estat de porter la guerre aux Iroquois en l'année 1687 et pour cet effet il prend ses précautions de bonne heure." (*Cor. gén.*, VII, 159.)

Le 12 novembre 1685, M. de Denonville envoie un mémoire au roi " concernant l'état présent du Canada, et les mesures que l'on doit prendre pour la seureté du pays", dans lequel il représente qu'il faut exterminer les Iroquois ; qu'il est impossible de se fier à leur parole ; qu'il faut renforcir le fort Frontenac et en construire un autre au détroit du lac Erié ; qu'il est indispensable que les Illinois et les alliés des Pays d'en haut se joignent aux Français ; qu'il ne peut, avant l'été prochain, en aviser le chevalier de Tonty, représentant La Salle au fort Saint-Louis-des-Illinois, ni La Durantaye ou du Lhut, qui sont aussi à l'ouest ; que la guerre ne doit être déclarée que lorsque tout sera prêt, et qu'il s'y prépare secrètement, sans éveiller les soupçons des Iroquois.[3]

Le 8 mai 1686, M. de Denonville insiste auprès du ministre sur la nécessité de fortifier Niagara. (*N. Y. Col. Doc.*, IX, 289).

Le tome VIII de la *Correspondance générale*, pages 66 et suivantes, contient un " extrait " (non pas une simple analyse) " des réponses aux lettres reçues du Canada pendant la présente année 1686 ". Il porte la date du 20 mai 1686, et ces réponses ont dû être reçues par M. de Denonville le plus tard par les derniers vaisseaux, à l'automne de la même année.

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[1] Elle a été presqu'entièrement traduite en anglais et publiée aux tomes III et IX des *N. Y. Colonial Documents.*

[2] Ce fut sans doute à la suite de ces instructions que, bien avant le coup de Cataracouy, on avait expédié des prisonniers iroquois aux galères de France. (*Col. de Mes*, I, 391, 394.)

[3] Ce mémoire se trouve aux Archives du Canada et dans les *N. Y. Colonial Documents*, p. 280. Un extrait en a été publié par Margry, vol. V, p. 8, et aussi dans la *Col. de Mes*, t. I, p. 348.

On y lit : " A M. de Denonville :

" Sa Majesté [1] a veu le mémoire [2] qu'il a envoyé concernant l'état présent du Canada, et les mesures que l'on peut prendre pour la seureté du pays. Elle l'a trouvé très utile et très sensé. . . . (*Ibid.*, 69.)

" En cas qu'il ne puisse se dispenser de faire la guerre aux Iroquois, il la commencera apparemment par ce poste (Cataracouy) qui luy fournit par sa situation un moyen de la terminer bientost, veu que les Iroquois passent à portée de ce fort en revenant de leurs chasses. Il peut aisément prendre une conjoncture favorable pour les attaquer au dépourveu ainsy qu'ils ont fait plusieurs fois aux François.

" Sa Majesté se remet à luy de faire sur ce sujet ce qu'il estimera de plus convenable en observant ce qui luy a esté expliqué, qu'il faut, par rapport au bien de la colonie, éviter la guerre autant qu'il sera possible avec seureté, et en maintenant les Iroquois dans la crainte qu'ils doivent avoir des François, mais que s'il faut la faire, il est nécessaire de prendre de bonnes mesures *pour exterminer promptement cette nation* et éviter de tirer la guerre en longueur." [3] (*Ibid.*, 73, 74.)

Le 12 juin 1686, M. de Denonville écrit au ministre : " La seule chose que je croy pouvoir faire à présent est de chercher à temporiser et tirer en longueur tant du mieux qu'il se pourra, cherchant à négocier jusques à l'an prochain, dans l'espérance que peut-estre les Illinois que *j'ay envoyé avertir* voudront bien s'assembler et s'approcher de l'ennemy par le lac Erié." [4] (Margry, V, 13.)

Le 8 novembre 1686, M. de Denonville envoie à la cour un mémoire [5] (" joint à la lettre du 8 novembre 1686 ") " sur l'estat présent des affaires du Canada et des necesitez de faire la guerre l'an prochain aux Iroquois ". Ce mémoire a dû partir par les derniers vaisseaux, et être reçu à Paris la même année.[6] On le trouve parmi les papiers de l'année. M. de Denonville y dit : " Le père de Lamberville s'en est retourné avec ordre de moi de convoquer toutes les nations iroquoises pour parler de nos affaires au printemps prochain à Cataracouy. Je suis persuadé qu'il n'y en viendra

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[1] Louis XIV régnait et M. le marquis de Seignelay était ministre de la marine chargé de la direction des affaires coloniales. La France était alors à l'apogée de sa puissance.

[2] Sans doute le mémoire du 12 novembre 1685.

[3] Le texte complet de ces réponses doit faire partie de la série B qui reste à copier. L'" extrait " n'est pas dans les *N. Y. Colonial Documents*, non plus que dans Margry ni Parkman.

[4] La Potherie, presqu'un contemporain, t. II, p. 188, dit qu'en 1686 M. de Denonville fit avertir tous les alliés des Pays d'en haut de se joindre à lui contre les Iroquois. Mgr de Saint-Vallier, p. 240, constate le même fait. Il ajoute, p. 241, que " tous les préparatifs de guerre furent faits dans le plus grand secret, et cependant on amusait les Iroquois par diverses négociations. . . . Tout étant prest, on publia la guerre dans Québec avec des solemnitez extraordinaires ".

[5] Ce mémoire a été traduit et publié dans les *N. Y. Colonial Documents.*

[6] La traversée de l'Atlantique durait de quarante à soixante jours.

guieres, mais mon dessein principal est d'y attirer,—le père jésuite restant seul, car dès cette année, il doit renvoyer son frère le cadet,[1] afin qu'il aye moins de peine à se retirer luy seul. Ce pauvre père ne scait rien cependant de nos desseins." (*Cor. gén.*, VIII, 172.)

Puis il conclut : " Il ne vous en faut pas davantage, Mgr, pour vous persuader qu'il n'y a plus à balancer et que l'on doit compter la colonie perdue si l'on ne fait pas la guerre l'an prochain. . . .

" La copie que je vous envoye des ordres que j'ay donnés pour nostre entreprise de l'an prochain, vous rendra compte de toutes les mesures que j'ay prises pour faire réussir nos desseins." (*Ibid.*, 173, 174.)

Le 10 novembre 1686, M. de Denonville écrit encore au ministre : " Ayant la guerre, comme il sera impossible de l'éviter, il faut s'étudier et s'appliquer à resserrer les habitans, ce qui ne se fera pas sans de grandes peines et ce qu'on n'ose entreprendre, que la guerre ne soit commencée." (*Cor. Gén.*, VIII, 200.)

Si M. de Denonville a pu garder le secret de son entreprise dans l'ancien gouvernement du Canada, il ne fut pas aussi heureux dans les Pays d'en haut. Après avoir informé le ministre, le 12 novembre 1685, qu'il ne pouvait aviser Tonty, La Durantaye et du Lhut avant l'été suivant, il rencontra un hardi voyageur, François Lenoir dit Rolland, propriétaire du fort Rolland, à Lachine, qui se chargea de porter ses dépêches aux postes de l'Ouest. Il était accompagné de Paul Bouchard dit Dorval, traiteur du Bout-de-l'Isle (*Lake St. Louis*, 212). Le texte de cette dépêche ne se trouve pas aux Archives ; mais Tonty lui-même nous en donne la teneur. Le 13 avril 1686, rendant compte de son voyage aux bouches du Mississipi, à la recherche de Cavelier de La Salle, Tonty raconte que, le 27 février, il visita le village des Illinois, " leur ayant fait quelques présents pour les inviter à marcher en guerre contre les Iroquois l'année prochaine, quand les François du Canada partiront en guerre contre la dite nation, selon ce que m'a escrit M. le marquis de Denonville, gouverneur et lieutenant général pour le Roy en Canada ". (Margry, III, 556, 560.)

Dans une lettre écrite à Montréal le 24 août 1686, à Cobart de Villermont en France, Tonty relate comment cette décision lui était parvenue. Il se rendit au poste de Michilimaquinak, le 15 janvier 1686, à la recherche du sieur Rolan, " qui me portait la lettre de M. le Marquis ". Il ajoute : " Je pars demain pour aller aux Illinois, afin de conduire cette nation contre les Iroquois, selon les ordres de M. le marquis. Je marcheray avec eux, et c'est un voyage de trois cents lieues par terre, dont dépend ma fortune, si Dieu m'y fait la grâce de réussir et de bien secourir les François, qui marcheront contre cette nation barbare le printemps prochain." (Margry, III, 560, 562.)

M. de Denonville ne fait pas mention de ces ordres dans ses dépêches ; ceux qu'il indique dans son mémoire du 8 novembre 1686, sont du 6 juin

[1] Jacques de Lamberville, S.J.

1686, et ont été transmis, l'un à La Durantaye et l'autre à Greysolon du Lhut, par le sieur Juchereau, leur commandant de fortifier deux postes, l'un au détroit du lac Erié et l'autre au portage de Toronto. Le père Enjalran, alors à Montréal, devra leur porter ses dernières instructions. Elles leur furent transmises, probablement par Tonty, dans un mémoire daté du 26 août 1686 et intitulé : *Mémoire instructif des mesures que j'ai prises pour la guerre résolue contre les Iroquois au printemps de l'année prochaine* (1687) *pour M.M. de Tonty, La Durantaye et du Lhut, chargés de rassembler les François qui sont dans les bois pour marcher avec les Sauvages amis qui se pourront ramasser.* Ce mémoire manque à nos archives, ainsi que la proclamation du 8 septembre 1686 aux commandants des postes, traiteurs et Sauvages alliés. M. Richard a eu l'obligeance de me fournir ce résumé. Ces documents sont à la collection Moreau Saint-Méry. (Série F. 3, vol. I.)

On voit par "l'extrait" de réponses, cité plus haut, que le roi permit au gouverneur de fortifier deux postes, à Niagara et au Détroit, "cependant qu'il observe de ne pas s'engager en de grandes dépenses". (*Cor. gén.*, VIII, 76.) Ce fut sans doute pour cette raison, qu'il abandonna son projet de fortifier Toronto. (*Cor. gén.*, IX, 42.)

Le 10 novembre 1686, M. de Denonville écrit au ministre : "J'envoye à Mgr un mémoire particulier de l'estat des affaires et de ce que je crois nécessaire pour la guerre et pour la seureté du pays." (*Cor. gén.*, VIII, 200.)

Le 16 novembre 1686, M. de Champigny écrit au ministre : "Monsieur le marquis de Denonville vous envoye, Monseigneur, un mémoire des raisons indispensables qu'il a de faire la guerre aux Iroquois l'année prochaine."[1] (*Cor. gén.*, VIII, 326.)

Evidemment, c'est du mémoire du 8 novembre 1686 que parlent ces deux lettres.

Le 30 mars 1687, le roi envoie à MM. de Denonville et de Champigny une dépêche dont le texte n'est pas dans la *Correspondance générale*, aux Archives du Canada, pour la raison expliquée plus haut.[2] Les *N. Y. Colonial Documents* en ont publié des extraits, dont je détache les passages suivants : "His Majesty has approved the conduct observed by said Sieur de Denonville towards the Iroquois, and the measures he has commenced adopting in order to place himself in a position to wage war against them with advantage. . . .

"His Majesty has approved of Sieur de Denonville's calling the Iroquois nations at Cataracouy, so as to effect the withdrawal of Father Lamberville, and in case this has not been accomplished, it is necessary to

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[1] Des extraits en sont publiés dans la *Col. de M^ss^*, vol. I, p. 271.

[2] Les Archives de Québec paraissent en avoir des extraits. Premier rapport de M. Langelier, p. 75 ; *Col. de M^ss^*, I, 394.

adopt measures to prevent his remaining exposed to the fury of the Savages. . . .[1]

" His Majesty has seen the memoir sent by the said Sieur de Denonville respecting the measures he has adopted, and the orders he has issued, for the next campaign, of which He has approved, and doubts not but success commensurate to his expectations will follow. . . . He expects to learn, at the close of this year, the entire destruction of the greatest part of those Savages. And as a number of prisoners may be made, who His Majesty thinks can be employed in the galleys, He desires him to manage so as to retain them until there be vessels going to France. Any who will have been captured before the sailing of those vessels can even be sent by the return of His Majesty's ships which will convey the troops." (*N. Y. Col. Doc.*, IX, 322, 323, 324.)

Le 8 juin 1687, quelques jours avant son départ pour Cataracouy, M. de Denonville écrit au ministre qu'il a reçu les dépêches du 30 mars 1687, que les troupes sont arrivées de France, et qu'il s'occupe de l'organisation de l'expédition. "Je me suis avancé," continue-t-il, "pour disposer tout pour nostre marche et pour diligenter les réponses que j'atendais des Iroquois par les pères de Lamberville ; le cadet est arrivé seul avec des lettres de son frère aisné. . . . Tout cela me fait craindre que le pauvre père n'ayt de la peine à se retirer d'entre les mains de ces barbares, ce qui m'inquiete fort." (*Cor. gén.*, IX, 32.)

Parlant d'un manifeste au peuple, où il expose les motifs qui l'ont engagé à faire la guerre, il dit qu'il n'a été publié, avec le mandement ecclésiastique qui l'accompagnait, " que dans le temps qu'il a fallu assembler tout le monde. . . . Je suis bien ayse de ne rien faire dont vous n'avez connaissance, soit aprèz l'avoir fait ou avant de le faire. (*Ibid.*, 32.). . . Par les dernières lettres que j'ay eu l'honneur de vous escrire le mois de novembre de l'année dernière, je vous ay rendu un compte assez exact des affaires du pays." (*Ibid.*, 33.)

Plus loin il ajoute : " J'ai toujours publié que je n'allois qu'à l'assemblée générale projettée à Cataracouy, où je ne voulois pas être insulté, ny moqué. J'ai toujours tenu ce discours jusque au temps de la marche, que j'ai cru devoir publié le manifeste accompagné du mandement." (*Ibid.*, 36.)

Il faut bien observer que dans cette dépêche comme dans les autres, il ne dit pas un mot d'un festin à donner aux Iroquois à Cataracouy. Il informe cependant la cour qu'il a convoqué ces sauvages pour conclure une paix générale, et l'on savait à la cour que le règlement de ces affaires était toujours couronné d'un festin. Un petit nombre prit l'invitation au sérieux, car le gouverneur Dongan ne cessa de leur crier durant l'hiver de 1687 que c'était un piège. C'était le rapport que plusieurs

[1] Cette recommandation à l'égard du père Lamberville a évidemment trait au mémoire du 8 novembre 1686, qui est approuvé dans cette dépêche.

Français lui avaient fait, entre autres Berthé de Chailly. (Rochemonteix, III, 615 ; *Cor. gén.*, VIII, 18.)

Le 16 juillet 1687, M. de Champigny écrit au ministre que l'armée partit de Montréal le 11 juin sous M. de Denonville et qu'il l'accompagna pendant trois jours ; puis il prit les devants soutenu d'une escorte de trente hommes et se rendit droit au fort Frontenac, où il y avait une forte garnison sous le commandement de d'Orvilliers.[1] " Pendant que j'y estois," dit-il, " on y areta un bon nombre de Sauvages iroquois qui étoient aux environs, crainte qu'ils donnassent avis de la marche *et pour affoiblir d'autant nos ennemis.*" (*Cor. gén.*, IX, 53.)

M. de Champigny ne resta au fort que deux jours, puis il repartit pour Québec où il voulait arriver avant le départ des vaisseaux du roi, qui avaient transporté les troupes.

En descendant, il rencontra M. de Denonville à la Galette, à 25 lieues au-dessous de Cataracouy ; mais il ne raconte pas ce qu'il lui rapporta. (*Ibid.*, 54.)

Puis il continue: " Je receus hier une lettre de M. de Denonville de Cataracouy du 3 de ce mois qui me donne avis qu'il m'envoie cinquante Iroquois pris proche ce lieu-là, pour les faire passer en France dans les navires du Roy conformément à vos ordres.....(*Ibid.*, 56.)

" Nous avons d'autant plus de sujet d'espérer un heureux succès de cette entreprise que jusqu'à présent les Iroquois ne nous ont pas paru en être avertis, la demeure du P. Lamberville avec eux leur ayant osté tout soupçon." (*Ibid.*, 58.)

Le 25 août 1687, M. de Denonville écrit au ministre : " Vous m'avez ordonné de vous envoyer les prisonniers que nous ferions." Il ajoute qu'il n'a pu envoyer que ceux pris à Cataracouy. (*Cor. gén.*, IX, 99.)

En examinant cette page d'histoire, je passe sous silence les exploits de M. de Denonville et de son armée aux villages des Iroquois situés au sud du lac Ontario, après le départ de Cataracouy, comme étant peut-être permis par le droit de la guerre tel qu'il était compris à cette époque en Amérique.

Il est impossible de lire ces pages de la correspondance officielle, sans arriver à la triste conclusion que le coup de Cataracouy, conçu par le marquis de Denonville et exécuté par lui-même, ou d'après ses ordres, a reçu une sorte de sanction préalable de la part de la cour de France, non pas dans tous ses détails, mais dans ses principaux traits et ses résultats. M. de Denonville, dans ses lettres et ses mémoires, ne parle pas de festin, il est vrai ; cette idée, probablement, ne lui est venue que plus tard, lorsque M. de Champigny partit pour Cataracouy avec ses soldats, comme étant le plus sûr moyen d'attirer les Sauvages au rendez-vous donné par le P. Lamberville ; il craint même qu'ils ne s'y rendront qu'en petit nombre.

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[1] M. de Denonville écrit au ministre le 6 novembre 1687 qu'il "a fait faire des murailles à Cataracouy". (*Cor. gén.*, IX, 8.)

Il représente au ministre qu'il a convoqué, par l'entremise de ce missionnaire en qui elles avaient une confiance illimitée, " toutes les nations iroquoises pour parler de nos affaires au printemps prochain à Cataracouy " ; que son but principal " est de les attirer ". Etait-ce pour " conclure une paix générale ", ainsi qu'il le dit au P. Lamberville et le répète dans son journal du mois d'octobre 1687 et d'autres documents? Non, c'était pour les anéantir. Il ne cesse de dire au ministre qu'il faut faire la guerre l'an prochain ; mais c'était son secret et celui de ses supérieurs et de ses intendants et commandants. Le pauvre P. Lamberville lui-même ne connaît rien " de nos desseins " ; il refuserait en effet d'être l'instrument coupable du gouverneur. Il a fait renvoyer son plus jeune frère afin de ménager son salut. Cependant, les événements subséquents ont démontré qu'il ne s'enfuit pas et qu'il faillit être rôti tout vif. Ce ne fut qu'à la grande estime dont il jouissait auprès de ces sauvages qu'il dût la vie. Bien plus humains que les Européens civilisés, ils se contentèrent de le chasser de leurs villages, sans lui faire de mal.

Et puis la cour de France, qui, sans être généreuse à l'égard des perfides Iroquois, pouvait au moins être juste, approuve le mémoire du gouverneur à temps pour qu'il sache à quoi s'en tenir sur ses intentions, avant de s'aventurer dans cette expédition, aussi gauchement exécutée que mal conçue. Elle lui en laisse les détails, mais il devra " prendre une conjoncture favourable pour les attaquer au dépourveu ". Sa Majesté, au lieu de lui défendre de tourner une réunion de paix en un acte de guerre, au mépris non seulement du droit des gens mais aussi des coutumes de ces barbares, déclare qu'elle " se remet à luy de faire sur ce sujet ce qu'il estimera de plus convenable ". Puis elle conclut qu'il " est nécessaire de prendre de bonnes mesures pour exterminer promptement cette nation ".[1]

Ce fut probablement en recevant ces instructions, que M. de Denonville et M. de Champigny eurent l'idée d'un festin, ne doutant pas que ce plan réussirait mieux. Le sort des prisonniers n'était pas laissé à son choix ; ses instructions, souvent répétées, étaient de les envoyer aux galères de France ; et il nous dit qu'il les a exactement suivies. Ce ne fut que lorsqu'ils pourraient lui être utiles, qu'il garda quelques prisonniers au pays. (*Cor. gén.*, IX, 100.)

Ces propositions de paix, cette " assemblée générale ", pour me servir de l'expression de M. de Denonville, n'avaient rien que de naturel, car la guerre entre les Iroquois et les Français, sauf quelques attaques contre les Illinois et les Miamis, leurs alliés, sur quelques points éloignés des

[1] Sir James Le Moine est d'avis que parmi les plus tristes tragédies de l'histoire sont : la dispersion projetée des habitants de la Nouvelle-York, 1689, le massacre de Glencoe, 1692, et la dispersion des Acadiens, 1755. (*Mém. Soc. roy.*, IV, 71.) Deux de ces exemples ont quelque ressemblance avec le coup de Cataracouy, 1687, savoir : le massacre de Glencoe et la dispersion des Acadiens, parce qu'ils furent aussi le résultat du dol et de la fraude. La trahison de Cataracouy est encore plus odieuse puisqu'elle fut commise en pleine paix.

Pays d'en haut, n'était pas commencée. Aucun acte d'hostilité ne fut commis dans les limites du gouvernement du Canada proprement dit, avant la fin de l'été de 1687, après le fameux coup de Cataracouy. M. de Denonville ne cesse de répéter qu'il ne commencera la guerre contre les Iroquois qu'en 1687. Il la commença par un crime. Le résultat fut une guerre atroce de dix ans, le massacre de centaines de soldats et d'habitants, la destruction de presque toutes les paroisses de l'île de Montréal et des environs. Pour comble de malheurs, la guerre éclata sur ces entrefaites entre la France et l'Angleterre, au sujet de l'invasion de l'Angleterre par le prince Guillaume d'Orange. Dès le 14 juillet 1689, la nouvelle en était répandue dans toute l'Amérique. Les Iroquois, alliés des Anglais, munis d'armes et de munitions, devinrent plus audacieux. Bref, à l'automne de 1689, tout, sans excepter l'honneur, paraissait perdu dans la colonie de la Nouvelle-France, qui, était devenue l'objet du mépris même des Sauvages, ses alliés. Son sauveur fut le comte de Frontenac. En 1693, il était proclamé "père du peuple, conservateur de la patrie". (*Cor. Gén.*, XII, 411.)

ROYAL SOCIETY OF CANADA

TRANSACTIONS

SECTION II.

ENGLISH LITERATURE, HISTORY, ARCHÆOLOGY, ETC.

PAPERS FOR 1899

BUILDERS OF NOVA SCOTIA

I.—*Builders of Nova Scotia: A Historical Review, with an Appendix containing Copies of Rare Documents Relating to the Early Days of the Province.*

By SIR JOHN G. BOURINOT, K.C.M.G., LL.D.

(Read 26th May, 1899.)

PREFATORY NOTE.

This paper was first read in part before the Historical Society of Nova Scotia, in the old chamber of the legislative council of the province, so full of the memories of three-quarters of a century, as well as before the professors and students of Acadia College, situated in the beautiful country, so intimately associated with the sad story of the French Acadians. Subsequently it was repeated at the special request of the Mayor and leading citizens of my native town of Sydney, whose history goes back to nearly twelve decades of years. The paper is now printed in the Transactions of the Royal Society of Canada with the addition of many interesting portraits, and of an appendix containing a number of important documents relating to the constitution and history of the oldest English province of the new Dominion, and now only found in a number of rare and expensive books not always available for students. I have also printed in this appendix the eloquent addresses delivered in 1854 by the Honourable James William Johnston, leader of the Conservative party, and the Honourable Joseph Howe, the eminent exponent of responsible government, on the occasion of the introduction of the first resolution moved and carried in a British North American legislature in favour of the union of the provinces. I have thought that these historic speeches should be known to the people of Canada generally and to the present generation of Nova Scotians especially. My readers will notice that I have not been able to give portraits of Governors Cornwallis and Lawrence, who performed such important functions in connection with the settlement of Nova Scotia after the foundation of Halifax. I have exhausted every effort to find in Europe and America portraits of these two eminent Makers of the province, but so far to no purpose. I have given, with one exception, only the portraits of public men who have long since joined the ranks of the "great majority." The exception is Sir Charles Tupper, who, despite his age of seventy-eight years, displays remarkable intellectual vigour and properly takes a place in these pages as a historical link between the ante-federation and the post-federation times of the province of which he is one of the most distinguished sons. I have also thought it due to the pioneers

in the religious development of Nova Scotia to give a brief sketch of the establishment of the five great denominations, the Roman Catholics, Presbyterians, Baptists, Church of England and Methodists—to place them in their numerical order—who comprise in their membership nearly all the population of a province, where the Church has always exercised a powerful influence on the social and moral conditions of a country where the Puritan and English element of New England has, in the course of over a century, intermingled with English, Scotch and Irish and given birth to the "Nova Scotian." In conclusion I shall only say that I have had no other desire, in the preparation of this monograph, which comprises in as small a compass as possible the results of the studies and investigations of years, than to recall the names and services of men who did good work for their country in the most critical periods of its history. Many of these men are now almost forgotten, but it is my hope that the youth of Nova Scotia will be inspired even by so imperfect a sketch as this to revive their memories and do them some justice even at this late date. I should also like to think that some readers in the other provinces of the Dominion will be induced to take an interest in the record of the Makers of a province, of whose history and eminent men of ante-federation days Canadians outside of Nova Scotia and New Brunswick have still relatively little knowledge. Canada can never be a Nation until the peoples, who live either by the sea, or in the valley of the Saint Lawrence, or by the great lakes, or on the western prairies, or on the Pacific slope, take a common interest and pride in each other's history and in the achievements of the men who reflect lustre on the respective provinces that make up the federation to the north of the ambitious American Republic.

J. G. B.

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In collecting portraits of eminent Nova Scotians mentioned below, I have had the invaluable aid of Judge Savary, of Annapolis Royal ; Reverend Mr. Armitage, of St. Paul's Church in Halifax ; Mrs. Archibald, of Halifax ; J. J. Stewart, Esquire, of the *Halifax Herald ;* James J. O'Brien, Esquire, of the Irish Charitable Society ; F. Blake Crofton, Esquire, of the Legislative Library ; Attorney-General Longley, D.C.L., F.R.S.C. ; Hon. Matthew Richey, D.C.L. ; T. B. Flint, Esquire, M.P., of Yarmouth ; President Trotter, Acadia University ; Dr. S. E. Dawson, F.R.S.C., of Ottawa, and Mr. J. W. L. Forster, the well known Canadian artist, who has designed the cover. As many of the photographic copies from old oil paintings were necessarily faint and imperfect, they had to be redrawn on a small scale and only inserted in the text. But I have given full page illustrations of distinguished Nova Scotians, whenever the copies could be adequately reproduced. For instance, the portraits of Hon. J. W. Johnston, Hon. J. Howe, Hon. R. J. Uniacke (senior), Sir John Thompson and Sir Charles Tupper are of this class.

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SIR WILLIAM ALEXANDER (LORD STIRLING).

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BUILDERS OF NOVA SCOTIA.

GREAT SEAL OF NOVA SCOTIA.

I.

Origin of the People of Nova Scotia.

I. Introduction—Historic Acadian Names.—If we study the map of Nova Scotia in the light of the history of the past, as far back as we have any records or traditions, we see that it has a legitimate claim to be considered the section of the North American continent first known to Europeans. It is quite probable that the Norsemen landed on its shores, and there are imaginative antiquaries who see Norse inscriptions on mysterious rocks that have been unearthed from time to time, and can even trace a Norse origin in the name of "Loran," which still clings to two little harbours in the vicinity of the historic ruins of Louisbourg, and appears on the oldest maps in the primitive and correct form of Lorambeque or Norembeque. It is quite certain that the Cabots and their English sailors were the first Europeans to see its bays and harbours, and they may have given the designation of *Prima Vista* to one of the headlands of the island which now forms its eastern political division; but those famous adventurers of the sea have left no memorial of their voyages among the names that have come down to us for centuries. On the other hand the Portuguese have left us the appropriate name of Fundy (Fondo) for the great funnel-shaped bay which washes the shores of the most

interesting and fertile section of the Acadian peninsula, and through which the Atlantic pours its tides with such irresistible force into the bays, harbours and estuaries of those parts of Nova Scotia and New Brunswick. Baccaro, an islet on the southwestern coast of the peninsula, is evidently a memorial of the Basque voyages, like the same name on

SIEUR DE MONTS.[1]

the eastern shores of Newfoundland, which was also called "Baccalaos" centuries ago. The oldest French name on the North American continent is "Cape Breton," which recalls the early maritime enterprise of the Bretons. The first voyage of De Monts and Champlain around the coasts

[1] The portrait I give of Sieur de Monts is taken from a copy of a water-colour drawing in the "Documents Collected in France" (i., 441), found in the Massachusetts Archives, and said to be reproduced from an original at Versailles. Such a portrait, however, on later examination, cannot be found at Versailles, and it is quite possible that the picture above simply shows the costume of a gentleman of the period. See Winsor's "Narrative and Critical History of America" (iv., 136 *n*), where the same portrait is given with the foregoing explanation.

of Nova Scotia in the beginning of the seventeenth century is perpetuated in the name of Lake Rossignol, which is a survival of Port Rossignol, now Liverpool, which received its first name from a fur-trader, whose ship and cargo were seized at that place for an infringement of the charter given to Sieur de Monts by Henry IV. of France in 1604. The large and beautiful La Have river—more correctly La Hève—is also a memorial of De Monts, and though Nova Scotia is a country of varied natural beauty, nowhere except on the Bras d'Or, in Cape Breton, are there such rare scenes of loveliness as on this grand river, so full of recollections of the days of French occupation, since it was here that Razilly and Denys first settled in the first half of the seventeenth century. A Nova Scotian poetess[1] has in melodious verse paid a fitting tribute to this picturesque stream :

> "And stranger tones have fallen where meet thy drooping trees,
> And foreign songs have lingered all homesick on the breeze ;
> Thy waves have caught the cadence, and seen the merry glance
> Of the peasant sons and daughters from vine-clad La Belle France."

Or let us leave the picturesque scenery of the La Hève, and seek rest in the beautiful vales where the crystal waters of the Gaspereau, a much smaller river, wend their devious way through low meadows of verdant intervale, with their wealth of wild roses, apple orchards, stately elms, aged willows, and glimpses of quaint bridges, dripping mill-wheels, and white church spires—scenes well described in the verse of an old Acadian student, Arthur Lockhart.[2]

Cape Breton abounds in many memorials of French discovery and occupation.[3] The Port of Louisbourg was named in honour of Louis Quatorze ; the fine island of Boularderie, whose fertile slopes and cliffs rise from the two entrances of the Bras d'Or Lake, recalls the memory of a gallant French officer who was its first proprietor. The large bay of Gabarus, where Boscawen's fleet landed the troops for the siege of Louisbourg in 1758, is a corruption of the name of Cabarrus, who was a French trader of last century. The beautiful Bay of Mira—the "a"

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[1] Mrs. Lawson (better known as Mary Jane Katzmann), one of the very few poets born in Nova Scotia. She was the author also of an interesting "History of Dartmouth, Preston and Lawrencetown (Akins's Historical Essay) Edited by Harry Piers, Halifax, N.S., 1893," with a portrait. Cape la Hève was the name given by De Monts and his associates to the first land reached by them in 1604, and in honour of the Cape near Havre in France, the port from which these early voyageurs sailed. See DesBrisay's Lunenburg, p. 166.

[2] See "The Masque of Minstrels and other Pieces, chiefly in verse," by B. U. and A. J. Lockhart (Bangor, Me., 1887). The authors are Nova Scotians, educated at Acadia College, in the land of Evangeline. The Gaspereau and Grand Pré are naturally the theme of their graceful and patriotic verses.

[3] See Bourinot's "Cape Breton and Its Memorials of the French Regime," in Trans. Roy. Soc. Can., vol. ix., sec. 2 ; also in separate 4to form, Montreal, 1890.

being clearly a mere anglicizing of the accented "é"—received its name from a French officer. Lingan Bay, where the coal mines were well known to the French settlers, is a vulgar form of l'Indienne. The French also softened the harsh Indian names of Nericka to Arichat, and of Achepé to Aspé, and of Kamsok to Canseau. The picturesque Bras d'Or, which divides the island into two sections, is now appropriately named the Golden Arm, but on the oldest maps it is Labrador, which may have been given by some settlers from Bradore Bay on the rugged, inhospitable northeastern shores of the Gulf of St. Lawrence.

In the course of years, after the treaty of Utrecht, when the British began to settle and occupy the country in earnest, British names prevailed. Annapolis, Halifax, Windsor, Horton, Cornwallis, Cumberland, Lawrencetown, Liverpool, Guysborough, Sydney, and hundreds of other names attest the British sentiments of the later occupants of the peninsula. Lunenburg is a memorial of the first German migration to Malagash or Merligueche Bay. While French, English, Scotch, and German peoples have in their turn linked their languages to all time with the geography of the Acadian land, the tongue of the original Indian natives, the Micmacs or Souriquois, a branch of the widespread Algonquin family—whose lodges extended from Cape Breton to the far west of Canada—is still perpetuated largely in the momenclature of the bays, harbours, rivers, and mountains of the beautiful country which stretches from Chebogue or Jebogue Point on the west to Canseau on the east, and from Arichat to Aspé. Acadie, the oldest name of Nova Scotia, is a memorial of the original Micmac occupants. In the early maps of Gastaldi, a distinguished Italian cartographer of the sixteenth century, we see the name of "Larcadia" spread over the country now known as the Maritime Provinces of the Dominion, and other mapmakers of the same or later time frequently call it Lacadia. It may be fairly presumed, in the absence of any other plausible or intelligent explanation, that these two names are simply variations of the Micmac *Kade*, or *Akade*, meaning a place or locality, which the early Breton and other French voyagers found in use on the Atlantic coast, in connection with some striking natural feature, and which survives until the present time in the names of Shubenacadie or Segubun-Akade, or place of the ground-nut, and of Passamaquoddy or Pestumoquade, the place of the pollock, and of many other localities in Nova Scotia noted for some special natural production. The French were in the habit of perpetuating these Indian names whenever they found them, as Canada, Saguenay, and Kebec (Quebec) undoubtedly prove.[1] We find the first official recognition of Acadie in the commission given by Henry IV. to

[1] See Bourinot's "Cape Breton, etc.," App. XIII., for illustrations of the use of "Akade" by the Micmacs.

Sieur de Monts, who was authorized to colonize "La Cadie."[1] The Indian name of Halifax Harbour still survives in Chebucto Head, while Shubenacadie, Musquodoboit, Chedabuctou, Tracadie, Pictou, Antigonishe, Escasoni, Mabou and Cobequid are only a few among the numerous mementos of the race whose descendants live on "reserves"—a few of them in comfort—and receive the protection of a paternal government. It is quite possible that these Indians may disappear[2] as a separate community in the course of another century before the aggressive competition of the white man, but whether this happens or not, their memory can never pass away

> "Whilst their names of music linger
> On each mount and stream and bay."

The courtier and poet, Sir William Alexander, at a later time Lord Stirling, who was ambitious to be the founder of a colony, suggested the name of Nova Scotia as early as 1621, when a few Frenchmen, a remnant of the first European settlement at Port Royal—were the only representatives of France in Acadia. "Being much encouraged hereunto by Sir Ferdinando Gorges,"[3] to quote his own words, "and some others of the undertakers of New England, I show them that my countrymen would never adventure on such an enterprise unless it were as there was a new France, a New Spain and a New England, that they might likewise have a New Scotland." King James I. of England entered heartily into the schemes of his favourite, and induced his privy council to approve of the grant to him of a charter under the great seal which made him lord paramount practically of ancient Acadia, as well as of Cape Breton and Prince Edward Island, under the name of Nova Scotia. Since this first appearance of the name in a royal charter it has always clung to the peninsular province.[4]

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[1] See Appendix A for full text of the commission to Sieur de Monts.

[2] At the present time there are a few over two thousand Micmacs in Nova Scotia —one-third of whom live on reserves in the island of Cape Breton—and the statistics of their condition show they are holding their own remarkably well as a distinct class of the total population. The Roman Catholic priests devote themselves assiduously to the amelioration of their state, and the dominion government contributes medical aid in times of illness.

[3] He was a governor of New Plymouth and received a royal charter in 1620 for the colonization and government of New England.

[4] See Appendix B for copy of the charter of 1621 given to Sir William Alexander for the plantation of Nova Scotia in America. Also *infra*, p. 34. The portrait of Sir W. Alexander that is given as a frontispiece to this volume represents him at the age of fifty-seven, and is taken from the engraving published by Marshall in 1635, and reproduced in Shafter's "Sir William Alexander and American Colonisation," Winsor's "Narrative and Critical History of America" (vol. iv., p. 156), and the Bannatyne Club's edition of "The Earl of Stirling's Register of Royal Letters relative to the affairs of Scotland and Nova Scotia from 1615-1635" (vol. i., frontispiece).

In the history of Nova Scotia there have been several well marked epochs of colonization and settlement.

The French Acadian settlement.

The foundation of Halifax.

The immigration from New England.

The coming of the Loyalists.

The Scotch settlement.

The influx of Irish.

In the course of the following pages I shall endeavour to show the salient features of the migrations of peoples who have had such important influences on the development of Nova Scotia.

II. French Settlement of Nova Scotia.—The seventeenth century is famous in the annals of North America as the period in which France and England became rivals for the possession of that continent. On the banks of the beautiful basin of Port Royal, now known as Annapolis Royal, by the side of the James River in Virginia, on the heights of Quebec, and on the shores of Massachusetts Bay, during the first quarter of that memorable century, were planted the germs of the Dominion of Canada and the United States of America. The ruins of a church tower, covered with ivy, and some mossy gravestones, are the only remains of the first permanent colony made by Englishmen in Virginia; but memorials of the French occupation of Acadia can still be seen in the sleepy town of Annapolis, with its tinkling ox-teams, apple orchards and old mansions; while picturesque Quebec, with its crowning citadel and ancient walls, its sombre convents and churches, its steep, erratic streets and its French people, recall the story of the bold Frenchmen who landed there one year after the English founded Jamestown.

Sieur de Monts, Samuel Champlain, and Baron de Poutrincourt were the pioneers and explorers of Acadia. They were the first to recognize the beauty of the basin of Annapolis when they entered it in the month of June, 1604. Their first post was erected on a little island, now known as Douchet Island, within the mouth of the St. Croix River, the present boundary between the state of Maine and the province of New Brunswick; but this spot was very soon found entirely unsuitable, and the hopes of the pioneers were immediately turned towards the beautiful basin, which was first named Port Royal by Champlain. The Baron de Poutrincourt, an enterprising and wealthy nobleman, who accompanied De Monts, obtained a grant of land around this basin, and determined to make his home in so lovely a spot. De Monts, whose charter was revoked in 1607, gave up the project of colonizing Acadia, whose history from that time is associated for years with the fortunes of the Biencourts, the family name of Baron de Poutrincourt; but the hopes of this adventurous nobleman were never realized. In 1613 an English expedition from Virginia, under the command of Capt. Samuel Argall, destroyed

the struggling settlement of Fort Royal, and also prevented the establishment of a Jesuit mission in the vicinity of the Island of Monts-Déserts, which owes its name to Champlain, who explored the coast of New England as far as Cape Cod. Baron de Poutrincourt, a ruined man, soon after met with a soldier's death, during the civil war then disturbing France. His eldest son and a few Frenchmen did not, however, leave the country, but remained in the neighbourhood of the ruins of the Fort Royal, which was originally built on the Granville or the north side of the basin, about five miles from the present town.[1]

The history of Acadia as a French possession was chiefly noted for feuds between rival chiefs, and for the efforts of the people of New England to obtain control of Port Royal, which was an ever-standing menace to English colonial interests. After the destruction of the French fort by Argall, Biencourt established a post at Cape Sable, and subsequently ceded all his rights in Acadia to Charles de la Tour, who had come to the country at an early age with his father Claude, who represented himself of noble birth, though it is not now possible to verify his claims. Both, however, were men of energy and courtly manners, which enabled the father in later years to win for his wife one of the ladies in attendance on Queen Henrietta of England. He also became one of the baronets[2] who formed an important feature of the plan of settlement devised by Sir William Alexander, when he obtained from the English king a grant of Acadia, and first named Nova Scotia. He interested the elder La Tour in his scheme, but the son remained faithful to France, and hoped to be lord of Acadia when the country was restored to France, in 1632, by the treaty of St. Germain-en-Laye, and the Scotch settlers at Port Royal were removed by the orders of Charles the First of England. Charles de la Tour, however, was superseded by Claude de Razilly, a knight of Malta, who established his headquarters at La Hève. Among those who came to the country at the same time and engaged in trading was Nicholas Denys, who afterwards made settlements in Cape Breton and was its first governor. When Razilly died his friend and lieutenant, Charles de Menou d'Aulnay Charnisay became his successor. Charles de la Tour, then on the St. John River, where he had built a fort, was deeply incensed at the success of his rival, who had influence at the French court and was made the king's lieutenant in Acadia. For years a deadly feud raged between the two men, and the cautious merchants of Boston were constantly perplexed which of the two they could support with the best prospect of profit to themselves. Eventually, in 1645, Charnisay succeeded in taking possession of La Tour's fort on the St. John, though his wife defended it with great bravery. A number of the

[1] See Bourinot's "Story of Canada" (Nations' series) London, New York and Toronto, 1897, for short history of the early settlement of Acadie.

[2] See *infra*, p. 36.

defenders were hanged, and Madame de la Tour appears to have been treated with contumely by Charnisay, and died soon after the fall of the fort. Both history and romance have made her a heroine of those early Acadian days around which much glamour has been cast in the lapse of two centuries and a half. Charnisay, who is believed to have built the fort on the point of land where Annapolis Royal now stands, had sound views of colonization and might have done much for Acadia had he not been drowned in the Annapolis River. His widow subsequently married Charles de la Tour in the vain hope of settling contested claims and saving a remnant for his children. After a chequered existence as a French colony, Port Royal was captured, in 1710, by General Nicholson, at the head of an expedition composed of the colonial militia and an English fleet. Then it received the name of Annapolis Royal, in honour of Queen Anne.

The whole population of the Acadian peninsula, at the time of its cession by the treaty of Utrecht, did not exceed fifteen hundred souls, and these were nearly all descendants of the relatively few people brought to the country during a period of a century by Poutrincourt, Razilly, and Charnisay. At no time did the French government interest itself in immigration to neglected Acadia. Of the population nearly a thousand persons were settled in the beautiful country which the industry and ingenuity of the Acadian peasants, in the course of many years, reclaimed from the restless tides of the Bay of Fundy at Grand Pré and Minas. The remaining settlements were at Beaubassin, Annapolis, Piziquid (now Windsor), Cobequit (now Truro), and Cape Sable. Some small settlements were also found on the banks of the St. John River and on the eastern bays of the present province of New Brunswick.

During the eighteenth century, when gentlemen-adventurers and a little band of pioneers were struggling to maintain French interests in Acadia, the King and his ministers only saw a befogged and sterile country, which had neither gold nor silver mines, and would never repay them for the expenses of colonization. In the course of time, they recognized the importance of the magnificent country watered by the St. Lawrence, and its tributary lakes and rivers; but, with an unpardonable want of foresight, they never saw, until it was too late, that the possession of Acadia with its noble Atlantic frontage was indispensable to a power which would grasp a continent and perpetuate the language and institutions of France in the western world. Had the French government energetically supported the efforts of those enterprising and courageous men who attempted to reclaim Acadia for France and civilization, England could never have made so easy a conquest of the northern half of the continent.

In the days of the French dominion Acadia was an ill defined region, which may be roughly stated to have included a large portion of the pre-

sent state of Maine—the portion east of the Kennebec—the province of New Brunswick in its entirety, a small part of the province of Quebec south of the St. Lawrence, and all of the peninsula of Nova Scotia. The island of St. Jean, now Prince Edward Island, and Cape Breton, also called Isle Royale after the treaty of Utrecht, when it became an important part of the French dominions on account of its commanding the entrance to the gulf of St. Lawrence, were never generally considered by France as parts of the original Acadia and were not included in the cession of Nova Scotia in 1713. The treaty ceded "likewise all Nova Scotia or Acadie with its ancient boundaries as also the city of Port Royal, now called Annapolis Royal," but it was not long before disputes arose between the rival nations as to these "ancient boundaries", and France eventually asserted the untenable pretension that the Acadia they had given up to England meant only one-half of the peninsula of Nova Scotia, and actually fortified the isthmus of Chignecto in the assertion of their unwarrantable claim to the rest of the Acadian region. Commissioners were appointed on behalf of the contesting nations to settle the dispute, but the only results were the complication of the question and the accumulation of documents which are now merely of interest to students of the past, since the question of our eastern boundaries no longer enters into the domain of practical international politics. No doubt, however, can exist in the minds of those who have carefully studied the history of Acadia from its first occupation by the French until the treaty of Utrecht that the name was generally given to the territory I have just mentioned and was not limited in its application to the peninsula of Nova Scotia. All disputes, however, were settled for ever by the treaty of Paris in 1763, in which the French king "renounces all pretensions which he has heretofore formed or might form to Nova Scotia or Acadie, in all its parts, and guarantees the whole of it with all its dependencies," to the King of Great Britain. By the same treaty, France ceded to England the important island of Isle Royale or Cape Breton, which, for the greater part of its history since 1763, has formed a valuable section of the province of Nova Scotia.

The Acadian settlement of Nova Scotia lasted until 1755, although the troubles of the people commenced immediately with the foundation of Halifax, and led many of them to find their way to New Brunswick, St. John's Island, and Cape Breton, before the stern mandate came to drive them from the lands they loved so well, and which they had made their own by their patient industry. In 1749 there were probably at least ten thousand French Acadians—though correct statistics on the point are not available—living in the Annapolis country, on the lands watered by the Gaspereau and other rivers that flow into the basin of Minas—the district of Grand Pré and Mines—at Piziquid (Windsor), at Cobequit (Truro), and at Beaubassin and other places on the isthmus of

Chignecto. It does not appear that more than six thousand persons were actually deported by the English in 1755, and of this number at least two-thirds were seized in the district of Grand Pré and Mines. It is believed that nearly one thousand sought refuge in the woods, and found their way to the southwestern coast. Probably three thousand, during the six years before the actual expulsion, went to the upper district of the river St. John, to the sheltered parts of the eastern coast of New Brunswick, and to the islands of St. John and Cape Breton. Parties of these refugees at Cape Sable, St. John River, and Bay of Chaleurs were also seized and deported at a later time—a fact, showing the relentless character of the persecution which dogged the movements of this hapless people. In the later times, when there was a considerable British population in Nova Scotia, and no fears of this hapless people were entertained, many of them were allowed to return to the peninsula and settle in the western part, where the township of Clare still gives illustrations of the thrift, industry, sobriety and piety of the descendants of the old proprietors of Acadia. For forty years after the treaty of Utrecht they increased and prospered, and had England treated them from the commencement with firmness, and kept in the province sufficient force to show them she was not to be trifled with, and there was no prospect of France regaining her old dominions by the sea, they might have been gradually won from their fidelity to the land of their origin, and taught to pay willing allegiance to their new masters, who, under all circumstances, had treated them with great consideration and at the same time with an obvious weakness. Had they been allowed to remain in the country, under the checks of a sufficient military force and populous English settlements, the ten thousand Acadian French, that occupied the fertile districts of the province in the middle of last century, would eventually have increased to a very large number, and exercised most important influence on the social, religious, and political conditions of Nova Scotia, even while remaining loyal to England. In other words, Nova Scotia might have been another French Canada.

As it happened, however, an inexorable Fate destroyed their happiness at one fell blow, and placed them among the most unfortunate of God's creatures. The remnant of the French Acadian race never exercised any influence on the destiny of the maritime provinces, when their institutions were being moulded and established. British influences eventually dominated in every section, and made the Acadian provinces what they have always been—most loyal dependencies of the Crown, even in those troublous times when the flag of revolt was raised in the valley of the St. Lawrence.

At the present time there are a hundred thousand people of French Acadian descent living in the maritime provinces, principally on the gulf shores of New Brunswick, in the western parts of the peninsula of

Nova Scotia, and in the counties of Richmond and Inverness in the island of Cape Breton. The total French population of Nova Scotia reached thirty thousand in 1890, when the dominion census was taken, and it is interesting to note that in the old Acadian districts of Annapolis and Kings there were only twenty persons who claimed to be descendants of the French pioneers, out of a total population of forty-two thousand souls. In Yarmouth, however, they numbered nearly one-half, and in Digby two-thirds of the whole population of those western counties. In Inverness and Richmond the proportions were one-fifth and two-thirds respectively. In the island of Cape Breton there are over twelve thousand people of this national stock, the great majority of whom live in the two counties I have just mentioned. In the district of Louisbourg, once so famous in the days of the French regime in Canada, not a single person is put down as a French Canadian by the census returns. These twelve thousand people or more are the descendants of the seven hundred old French or Acadians who remained in 1758 after the capture of the fortress of Louisbourg, and of the one hundred families who came into the island between that year and 1810. Some descendants of the same race are also found in Prince Edward Island, where there were probably four thousand people at the time of its occupation by England, and the greater number of whom were also deported with unnecessary harshness from the lovely island to which they had fled during the troublous years that followed the settlement of Halifax. Of late years the French Acadian population of the maritime provinces have shown a progressive tendency in intellectual as well as material matters, and the establishment of such colleges as St. Joseph's at Memramcook, in New Brunswick, and St. Anne's at Church Point, in Nova Scotia—institutions on the plan of French Canadian colleges—is doing excellent work by stimulating the best faculties of the youth that frequent them, and in laying the foundations of a brighter future for a race which is now improving in many ways under the influences of modern conditions to which they were very slow to yield in the past.[1] Their numbers in New Brunswick and elsewhere

[1] For an optimistic view of the prospects of the French Acadians see "Le Père Lefebvre et l'Acadie," (Montreal, 1898), by Senator Pascal Poirier, F.R.S.C., who is himself an example of the intellectual progress of the people, whose condition he naturally presents in the most favourable aspect. Father Lefebvre undoubtedly did much in connection with St. Joseph's College to entitle him to be called "le futur sauveur de l'Acadie." It was on the formal request of Archbishop O'Brien that a classical college was founded in the midst of the French Acadian communities in the western part of Nova Scotia. Senator Poirier informs us that St. Anne's College was established in 1890, under the auspices of the "Congrégation des Eudistes," and the Reverend Father Gustave Blanche of Rennes, Brittany, became *curé* of Church Point and Saulnierville, to facilitate the foundation of the college. M. Placide Gaudet, who is a teacher in this young institution, is now preparing a genealogy of Acadian families which, no doubt, will be a fitting supplement to Abbé Tanguay's work on Canada. An interesting series of papers on French Acadian families is now appearing in the "New Brunswick Magazine," from the pen of Mr. James Hannay, the author of "The History of Acadia; from its discovery to its surrender to England by the treaty of Paris" (St. John, N.B., 1879).

give them a certain amount of influence in politics, and enable them to return to legislative bodies energetic representatives who protect the special interests of their people and ably assist in the general legislation of the country. Among the names of early Acadian settlers were Robicheau, Poirier, Landry, Richard, Martin, Leblanc, Girouard, D'Entremont, Gaudet, Hébert, Boudrot, Cormier (Cormié), Bourgeois, Melanson,[1] Doucet, Blanchard, and Thibaudeau, whose descendants are still well known in the country which their ancestors loved so well.[2]

III. Foundation of Halifax.—The foundation of Halifax[3] practically put an end to the Acadian period of Nova Scotian settlement. Until that year the English occupation of the country was merely nominal. Owing largely to the representations of Governor Shirley, of Massachusetts—a statesman of considerable ability who distinguished himself in public affairs during a most critical period of American history—the British government decided at last on a vigorous policy in the province, which seemed more than once on the point of passing out of their hands. Shirley always recognized the necessity, as well as importance, of establishing a British colony in Nova Scotia on a permanent basis, and copies of his letters were given to Governor Cornwallis on account of the valuable information they contained. This eminent man, to whom full justice has never been given by Canadian historians, was governor of Massachusetts in 1745, and it was largely owing to his exertions that the expedition led by Pepperrell against Louisbourg was successfully launched; and had his influence prevailed, no doubt that fortress, so long a menace to British interests in Northeastern America, would never have been restored in 1748. He was one of the commissioners appointed by Great Britain to come to a conclusion with France as to the rightful limits of Acadie. He was instrumental in having a survey made of Nova Scotia, and otherwise showed his deep interest in the affairs of a country so long neglected by England. An American historian[4] only does justice to this Builder of Nova Scotia when he says:

[1] This family is supposed to have sprung from one of Sir William Alexander's Scotch settlers. See "New Brunswick Magazine," Vol. I., pp. 129 *et seq.*; 360: Vol. III., pp. 17 *et seq.*

[2] In the following French works there are some interesting details of the early French settlers in Acadie:

"La France aux Colonies. Etudes sur le développement de la race française hors de l'Europe. (Les Français en Amérique, Acadiens et Canadiens.) Par E. Rameau, Paris, 1859."

"Une Colonie féodale en Amérique, L'Acadie (1604-1881). Par Rameau de Saint-Père, 2 vols. Paris et Montréal, 1889."

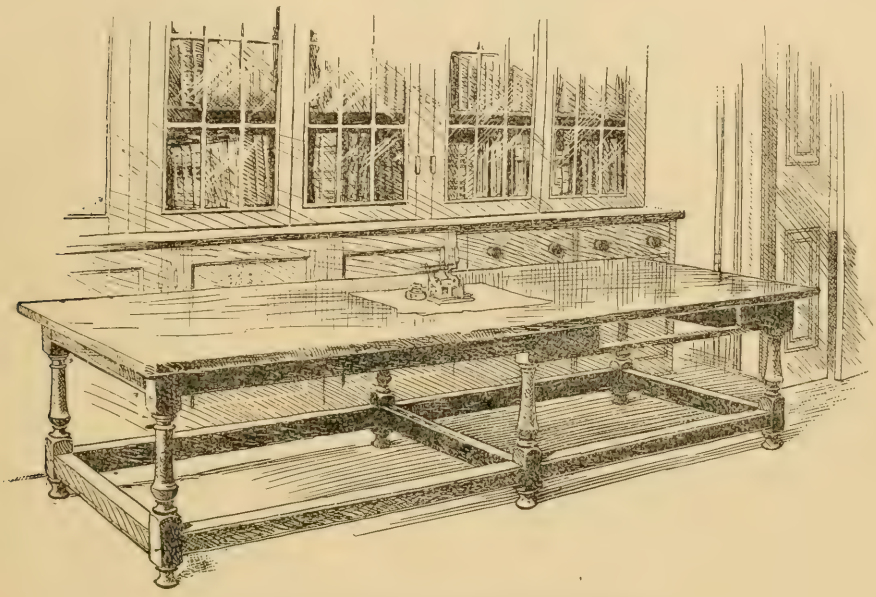
[3] See Dr. Akins's "History of the City of Halifax," in vol. VIII. of Collections of the N.S. Historical Society, 1895, for interesting and minute details of the early history of the capital of Nova Scotia.

[4] See Minot's "History of Massachusetts," (vol. I., pp. 292-297) cited by Akins in "Selections from the Public Documents of the Province of Nova Scotia," (Halifax, N.S., 1869), p. 380.

GOVERNOR SHIRLEY.

"Although he held some of the most lucrative offices within the gift of the Crown in America, yet he left nothing to his posterity but a reputation in which his virtues greatly prevailed over his faults—a reputation not surpassed by that of any succeeding governor under the English sovereignty."

Halifax was founded by Honourable Edward Cornwallis, on the slope of the hill, whose woods then dipped their branches into the very waters of the noble harbour long known as Chebuctou, and renamed in honour of the Earl of Halifax, a member of the Montague family, who was at the



OLD COUNCIL TABLE IN PROVINCE BUILDING.

head of the Council of Trade and Plantations, which had in those days full control of the administration of colonial affairs. Colonel Cornwallis, a son of the baron of that name—a man of firmness and discretion—entered the harbour on the 21st of June, old style, or 2nd July, present style, and soon afterwards assumed his duties as governor of the province[1]. The members of his first council were sworn on board one of the transports in the harbour.[2]

The new town was laid out by Mr. Bruce, the military engineer, and Captain Charles Morris, who had made under the orders of Governor

[1] See Appendix C for copy of royal commission to Governor Cornwallis.

[2] In the small council chamber, adjacent to the legislative library, in the old province building at Halifax, can still be seen the table round which Cornwallis and his council first deliberated on board the "Beaufort," July 14, 1749. I give a sketch in the text.

Shirley of Massachusetts, a survey of Nova Scotia in 1745-46, when a plan of colonization was being formed in England. Subsequently he became the first surveyor-general of Nova Scotia, and the founder of a distinguished family, long identified with the public life of the province as members of the judicial bench, and council, and as chiefs of the public surveys.[1]

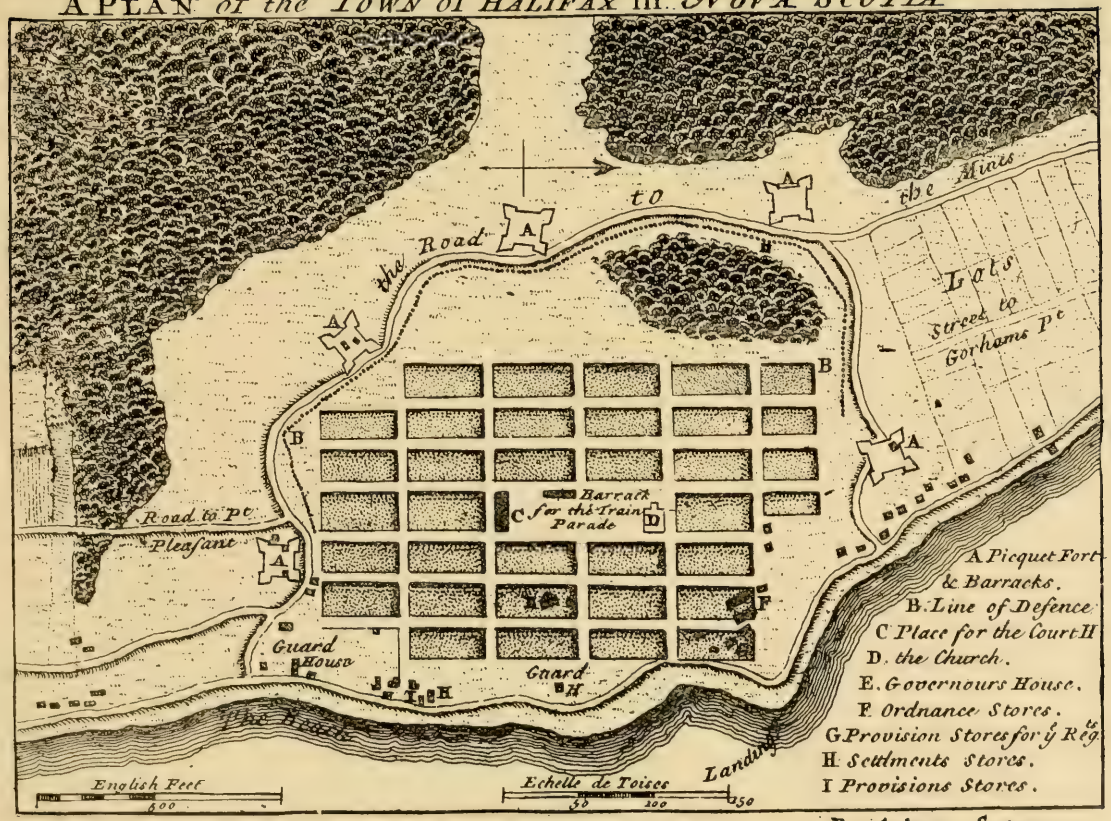
COLONEL MASCARENE.

From Savary's edition of Calnek's Annapolis.

The first council appointed by Cornwallis comprised Colonel Mascarene, John Gorham, Benjamin Green, John Salisbury, Hugh Davidson and Capt. Edward How. Colonel Mascarene had been for some years lieutenant-governor at Annapolis, the capital from 1710 until 1749. Colonel Gorham had taken part in Pepperrell's expedition against Louisbourg in 1745, and was a member of Mascarene's old council.

[1] Four members of the family, including Captain Morris, were surveyors-general in succession. A fine street in Halifax is named in their honour. The original of Morris's Map of Nova Scotia and "the Northern English Colony together with the French neighbouring settlements, taken from actual surveys and most approved drafts and other accounts," is now in the Lenox Library, New York, and a copy appears in the edition of "The Journal of Capt. W. Pote, Jr., during his captivity in the French and Indian War, &c.," printed by Dodd, Mead & Co., New York, 1896. See Appendix D of this work for further reference to the Morrises.

A Plan of the Town of Halifax in Nova Scotia



P. Andrews · Sculp

Captain How will be best remembered by readers of Nova Scotian history on account of his tragic death at Beaubassin through the treachery of LeLoutre. Messrs. Davidson and Salisbury were Englishmen who came out with Cornwallis. Mr. Green was a graduate of Harvard University, and afterwards became treasurer of the province. Other persons were in the course of time added to the original council just named, until it reached its maximum of twelve members, as follows: Col. Mascarene, Col. Gorham, B. Green, John Salisbury, Hugh Davidson, Capt. How, W. Steele, Major Lawrence, Col. Horseman, Col. J. Francis Mercer, Col. R. Ellison, Col. Hopson. The governor *ex-officio* presided in those times. One of the first acts of the executive was the appointment of the following justices of the peace[1]: John Brewse, Robert Ewer, John Collier, and John Duport.

It was first proposed to make the settlement near Point Pleasant, then called Sandwich Point, but on further exploration of the harbour a more suitable situation to the northward was chosen. The town was laid out by the engineers in square blocks, three hundred and twenty feet by one hundred and twenty in depth, and the streets were given an actual width of fifty-five instead of sixty as first contemplated. As originally surveyed, Salter street was the limit to the south, and Buckingham street to the north, but a new division of lots was immediately added, and Jacob street became the northern boundary as it appears in the early plan of the town on a separate page. The town was surrounded by a cordon of palisades or upright pickets with five quadrangular block-houses at important points. By 1753 the town, as the plan shows, contained thirty-five blocks and fourteen streets, seven running from east to west, and seven from south to north, which are still thoroughfares of the modern city. In the middle of the town was the parade, ever since a familiar feature to residents of the town. On the upper part of this ground the barracks of the Royal Artillery stood for some years. An historian of the city[2] tells us that before 1760 "the houses were generally built of square and round timber, some with small pickets placed upright between the stubs of the frame, and the whole covered over with clap-

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[1] I give in Appendix D Dr. Akins's brief sketches of Governor Cornwallis, Colonel Mascarene, Chief Justice Belcher, Colonel (afterwards governor) Lawrence, Rev. Dr. Breynton, Hon. Richard Bulkeley, B. Green, John Salisbury, H. Davidson, Capt. How, Col. Gorham, Charles Morris (first Surveyor-General), Capt. Cotterell, W. Nesbitt (Speaker of Assembly), A. Hinshelwood, Otis Little, Rev. J. B. Moreau, J. Creighton, Col. Hopson, Capt. J. Collier, Capt. H. Gates, J. Binney, B. & J. Gerrish, Major Lochman (from whom Lockman street is named, though spelt incorrectly), M. Salter, R. Gibbons (a name well known in Cape Breton), John Duport, Joshua Mauger (from whom Maugerville in New Brunswick is named), Michael Franklin and other persons who took leading parts in the establishment of the government of the new provinces.

[2] Akins's History, p. 219.

boards; they were usually of one story with a hipped roof, the shops and half-doors with no glass, swinging signs, and wooden shutters opening downwards, on which goods were exposed for sale." The first government house stood on the site of the present province building, and had only one story, defended by small pieces of ordnance mounted on hogsheads of gravel and sand[1]. In the plan, ground for a church is reserved at the north end of the parade, where the City Hall now stands, but as a matter of fact St. Paul's was actually built on its present site, where the Court House was to have been erected. This building was first built at the northeast corner of Buckingham and Argyle streets, where Northup's well known store and market stood for years within the memory of living citizens. Block houses and eventually batteries were raised at all important points around the harbour, whose chief defence for years was the fort on George's Island. In early years there was only a small redoubt on Citadel Hill, which was included within the original palisades. That important position was defended by a fort about or after the commencement of the rebellion of the thirteen colonies, though the present fortifications may be said to date actually from 1794-7, when the Duke of Kent, then in command of His Majesty's forces, ordered the removal of the old fort and the commencement of new works.[2]

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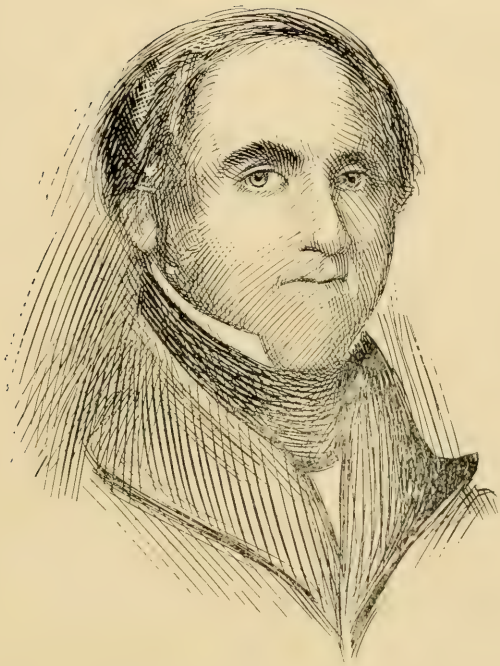
[1] The present government house dates from 1800, when the corner stone was laid. It was first occupied in 1805 by the Loyalist governor, Sir John Wentworth. See paper on this building by Sir Adams G. Archibald in Collections of N. S. Hist. Soc., vol. 3. For view of old government house, see opposite p. 20.

[2] The plan I give of the town is taken from my copy of "A set of Plans and Forts in America reduced from actual Surveys in 1763," a rare and valuable book, from which Dr. Winsor's "Narrative and Critical History of America" (see vol. V., 444*n*) copies many illustrations. The plan, however, is the same as all the plans of the town published from 1750 to 1763, and is evidently taken from the official survey of the original settlement. This is proved by the fact that it gives the site first intended for St. Paul's, which was actually commenced in 1750, or one year after the town was laid out, on the ground intended for the Court House. The plan shows that there was a large space of ground cleared all around the new town; and that there was a road laid out to the French settlements at Mines where the English had a small fort. The resident of Halifax will recognize the present streets: Salter, Sackville, Prince, George, Duke, Buckingham and Jacob, from east to west; Hollis, Granville, Barrington, Argyle, Grafton, Albemarle, Barrack (Brunswick) from south to north. Water street was not in the original plan, but a space was reserved between the most easterly blocks and the shore. A road to Point Pleasant connected with Barrington street as at present. The progress of the town within thirty years can be estimated by reference to the plan printed in the "Atlantic Neptune," which contains a very perfect set of charts of the coasts and harbours of Nova Scotia and Cape Breton, as well as of the gulf and river St. Lawrence, published by Colonel DesBarres for the use of the royal navy of England, in 1777 and in 1781. The plan in question as well as the view of the town I give was probably prepared before 1780, as it does not indicate any regular fortification, but only a small inclosure on Citadel Hill. It delineates upper and lower Water street, with all the wharfs of those days to which it gave access, as well as the dock yard, and the ordnance yard—the latter having been only commenced nearly three decades of years after the foundation of the town. In addition to the two plans cited above, I have in my library,



HON. CHARLES MORRIS, FIRST SURVEYOR-GENERAL.

From a portrait in possession of Mrs. Morris of Halifax, widow of the great grandson of the first surveyor-general of Nova Scotia. (*See page 14 n.*)

Between two and three thousand people were brought in by the British government to found the new town and settle the country. These people were chiefly made up of retired military and naval officers, soldiers and sailors, gentlemen, mechanics and farmers—far too few—and some Swiss, who were extremely industrious and useful. On the whole, they were not the best colonists to build up a prosperous industrial community. The government gave the settlers large inducements in the shape of free grants of land, and supported them practically for the first two or three years[1]. It was not until the Acadian population was removed, and their lands were available, that the foundation of the agricultural prosperity of the peninsula was really laid.

In the summer of 1753 a considerable number of Germans were placed in the present county of Lunenburg, where their descendants still prosper, and take a most active part in all the occupations of life. Many of the settlers came from Lüneberg, others from Switzerland, and not a few from Montbéliard, in the department of Doubs, between the Rhine and Rhone. The names of original settlers—of Rudolf, Jessen, Knaut, Kaulbach, Hebb, Eisenhauer, Gaetz, and Oxner, particularly—are constantly met in the official and political records of the country for nearly a century and a half. A Kaulbach now represents the county in the House of Commons[2].

IV. New England Migration.—The settlement of 1749 was supplemented in 1760 and subsequent years by a valuable and large addition of people who were induced to leave Massachusetts and other colonies of New England and establish themselves on the fertile Acadian lands and other favoured parts of the peninsula. Persons not well acquainted with

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one published at Nuremberg in 1756, another in Paris in 1755, both of which are the same as the one I give. The same plan was also printed at Hamburgh in 1751. Opposite pages 18, 20, 24, 26, I give reprints of four old copper plates (London, 1777), engraved by John Boydell from drawings by R. Short, dedicated to Lord Halifax, and in possession of Dr. S. E. Dawson of Ottawa.

[1] In Dr. Akins's "Selections from the Public Documents of the Province of Nova Scotia," (Halifax, N.S., 1869) we find the following lists of the early settlers:

1. List of the settlers who came out with Governor Cornwallis to Chebucto in June, 1749. Page 506 *et seq.*

2. A list of the families of the English, Swiss, etc., which have been settled in Nova Scotia since the year 1749, and who are now settlers in the places hereinafter mentioned. Page 650 *et seq.* A total of 4,249 persons are given as living within the pickets and suburbs of Halifax, town of Dartmouth, on the islands and harbours, employed in the fisheries, and on the isthmus and the peninsula of Halifax. This enumeration is confined to the places named and does not comprise the British people living in Annapolis, then very few in number. The same list is given in Akins's "History of Halifax City." Coll. N.S. His. Soc., vol. VIII., 1895. Mr. Justice Burbidge, the able judge of the exchequer court of Canada, is a relative of Colonel Burbidge, one of the early English settlers, who became one of the most useful and influential inhabitants of the Cornwallis district.

[2] See "History of the County of Lunenburgh," by Mather Byles DesBrisay, judge of County Court, etc., Toronto, Montreal and Halifax, 1895. Large 8vo, illustrated.

the history of the Acadian provinces are wont to attribute the material prosperity of the peninsula of Nova Scotia, mainly to the large body of Loyalists who left their homes in the old colonies, after the war of independence. As a matter of fact, however, there were two well-defined streams of immigration into the province after the expatriation of the French Acadians. The first was the influx of the people properly known as Pre-Loyalists, who settled in townships of the present counties of Annapolis, Kings, Hants, Queen's, Shelburne, Yarmouth, Cumberland and Colchester, especially in the beautiful townships of Cornwallis and Horton, where the Acadian meadows were the richest.

During the few years that had elapsed since the Acadians were driven from their lands, the sea had once more found its way through the ruined dykes, which had no longer the careful and skilful attention of their old builders. The new owners of the Acadian lands had none of the special knowledge that the French had acquired, and were unable for years to keep back the ever encroaching tides. Still there were some rich up-lands and low-lying meadows, raised above the seas, which richly rewarded the industrious cultivator. The historian, Judge Haliburton, describes the melancholy scene that met the eyes of the new settlers when they reached, in 1760, the old home of the Acadians at Mines. They found ox-carts and yokes which the unfortunate French "had used in conveying their baggage to the vessels which carried them away, and at the skirts of the forest, heaps of the bones of sheep and horned cattle that, deserted by their owners, had perished in winter for want of food." They came across a few straggling families of Acadians who "had eaten no bread for years, and had subsisted on vegetables, fish, and the more hardy part of the cattle that had survived the severity of the first winter of their abandonment." They saw everywhere "ruins of the houses that had been burned by the Provincials, small gardens encircled by cherry trees and currant bushes, and clumps of apple trees." In all parts of the country where the new colonists established themselves, the Indians were unfriendly for years, and it was necessary to erect stockaded houses for the protection of the settlements [1].

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[1] For details of this early New England migration, see following authorities:

"An Historical and Statistical Account of Nova Scotia," by Thomas C. Haliburton, barrister-at-law and member of the House of Assembly of Nova Scotia. In two volumes, 8vo, with a map and several engravings, Halifax. Printed and published by Joseph Howe, 1829.

"History of the County of Annapolis," including old Port Royal and Acadia, with memoirs of its representatives in the provincial parliament, and biographical and genealogical sketches of its early English settlers and their families. By the late W. A. Calnek. Edited and compiled by A. W. Savary, A.M., judge of the county court of Nova Scotia. With portraits and illustrations, Toronto, etc., 1897. This book is ably edited by Judge Savary, whose knowledge of the eminent men of his province, and especially of his historic county, is probably not equalled by any other living Nova Scotian. I am indebted to him for many valuable details during my studies of the Loyalists and other classes of the people of Nova Scotia.

VIEW OF TOWN AND HARBOUR OF HALIFAX IN 177

See page 17 n.

A number of the New England people also established themselves at Maugerville, and other places on the St. John River. The peopled district on the St. John River became subsequently known as Sunbury county and obtained representation in the Nova Scotia legislature. The township of Sackville was settled chiefly from Rhode Island, and had also a member in the same assembly.

No better class probably could have been selected to settle Nova Scotia than the American immigrants. The majority were descendants of the Puritans who settled in New England and some were actually descended from men and women who landed from the *Mayflower* in 1620. The county of Yarmouth has always illustrated the thrift and enterprise which were the natural heritage of the founders of New England. Governor Lawrence recognized the necessity of having a sturdy class of settlers, accustomed to climatic conditions and to agricultural labour in America, and it was through his strenuous efforts that these immigrants were brought into the province.[1] They had, indeed, the choice of the best land of the province and everything was made as pleasant as possible for them by a paternal government, only anxious to establish British authority on a sound basis of industrial development.

In 1767, according to an official return in the archives of Nova Scotia,[2] the total population of what are now the provinces of Nova Scotia, New Brunswick and Prince Edward Island reached thirteen thousand three hundred and seventy-four souls, of whom six thousand nine hundred and thirteen are given as Americans, nine hundred and twelve as English, two thousand one hundred and sixty-five as Irish, one thousand nine hundred and forty-six as Germans and one thousand two hundred and sixty-five as Acadian French, the latter being probably a low estimate. Many of the persons called Irish in this return came really from the north of Ireland, and were Scotch Presbyterians. They were

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"Memorial of the 121st and 122nd Anniversary of the Settlement of Truro by the British, etc., Truro, N.S., 1894." It contains an interesting address by Sir Adams G. Archibald, then lieutenant-governor, a descendant of one of the first settlers of the district. Another important address is that by Mr. Israel Longworth, which is replete with valuable historical details.

"A History of the County of Yarmouth, Nova Scotia. By the Rev. J. R. Campbell, St. John, N.B., 1876." It contains (pp. 111 *et seq.*) a list of the first settlers from New England.

"Yarmouth, N.S. A sequel to Campbell's History. By George S. Brown, Boston, 1888." It contains very full data of the social, material and religious progress of this interesting and prosperous section of Nova Scotia.

[1] See Appendix E for Governor Lawrence's proclamation, setting forth the terms on which people from New England could settle the province—aptly called "the charter of Nova Scotia" by the historian Haliburton, vol. I., p. 220.

[2] See Appendix F for an extract from "A General Return of the several townships in the province of Nova Scotia for the first day of January, 1767. Dr. Allison of the University at Sackville, N. B., has a valuable commentary on this return in he papers of the Nova Scotia Historical Society for 1888, vol. VII.

MARINE BIOLOGICAL LABORATORY LIBRARY

brought out by one Alexander McNutt, who did much for the work of early colonization ; others came from New Hampshire, where they had been settled for some years. The name of Londonderry in New Hampshire is a memorial of the migration of this important class just as the same name recalls them in the present county of Colchester. A few persons of the same class went to Amherst, Wilmot and Windsor.

Some of these people, however, were not animated by those sentiments of burning loyalty that distinguished the people who suffered so deeply during the War of Independence, and sought refuge in Acadia and Canada rather than swerve from their allegiance to England. During the war some of these inhabitants notoriously sympathized with their rebellious countrymen, and at one time it was necessary to take stringent measures to awe the rebellious element in Cumberland. The people of Truro, Onslow and Londonderry refused to take the oath of allegiance, and were for a time not allowed to be represented in the assembly. In other places a few desired to be neutral during the revolution, but the government very properly would not permit it. Some overt acts of treason were committed, but the authorities had always full knowledge of the suspected persons who were inclined to betray the government that had treated them with so much consideration from the moment they came into the country.[1] The settlers in the townships of Cornwallis, Horton, Windsor, Falmouth and Newport appear to have shown a continuous attachment to British connection, and raised several companies of volunteers for the defence of the province. The number of disaffected persons among the New England immigrants of 1760-61 were small when we consider their intimate connection with the rebellious

[1] Governor Franklin, in a letter to the Earl of Shelburne under date of 1766, gives an interesting reference to the condition of the new settlements : "The country people in general, work up, for their own use, into stockings, and a stuff called homespun, what little wool their few sheep produce ; and they also make part of their coarse linen from the flax they produce. The townships of Truro, Onslow and Londonderry, consisting in the whole of six hundred and ninety-four men, women and children, composed of people chiefly from the north of Ireland, make all their linen, and even some little to spare to the neighbouring towns. This year they raised seven thousand five hundred and twenty-four pounds of flax, which will probably be worked up, in their several families, during the winter. I cannot omit representing to your Lordship, on this occasion, that this government has at no time given encouragement to manufactures which could interfere with those of Great Britain ; nor has there been the least appearance of any association of private persons for that purpose ; nor are there any persons who profess themselves weavers, so as to make it their employment or business, but only work at it, in their own families, during the winter and other leisure time. It may be also proper to observe to your Lordship that all the inhabitants of this colony are employed either in husbandry, fishing, or providing lumber ; and that all the manufactures for their clothing, and the utensils for farming and fishing, are made in Great Britain." See Murdoch's "History of Nova Scotia," vol. II., p. 463. Those were days when the mperial government prohibited the manufacture of all articles that were made in England, as the history of the old thirteen colonies notably shows.

VIEW (1777) OF GOVERNMENT HOUSE (IN CENTRE), MATHER'S CHURCH (TO LEFT), ST. PAUL'S CHURCH (TO RIGHT), WITH GLIMPSE OF PARADE, CITADEL HILL.

See page 17n.

colonists; and the imperial authorities, outside of the Cumberland district, do not appear to have had reasons for serious anxiety during the progress of the war.

From this early immigration have sprung many of the best known men of Nova Scotia. For instance, T. C. Haliburton ("Sam Slick"); Sir Charles Tupper, the veteran statesman; Dr. Borden, at present minister of militia in the dominion government; Mr. R. L. Borden, who represents Halifax in the House of Commons; Senator Lovitt and Mr. Flint, M. P., of Yarmouth; Mr. Justice Barker, of St. John; Attorney-General Longley, eloquent and witty, who cultivates literature with success, even amid the depressing influences of petty provincial politics; besides the Chipmans, Ritchies, Eatons, Dickies, DeWolfes, Brechins, Burpees, and many others. Dr. S. E. Dawson, the queen's printer, at Ottawa, and an able historian and essayist, can trace a family connection to the Cobbs, who settled in Nova Scotia, and one of whom, Sylvanus, took part in the two sieges of Louisbourg in 1745 and 1758. Dr. T. H. Rand, of McMaster University, and Dr. B. Rand, of Harvard, are members of a family first notable for the Reverend Silas T. Rand, the linguist and Micmac scholar. The Archibalds, who have given so many eminent men to the public service of Canada and the Empire, are descended from four brothers of the Scotch-Irish migration of 1762, who settled in Truro, and surrounding country. One of the notable members of this family, whose name is even yet a household word in the county of Colchester and elsewhere, was Samuel G. W. Archibald, who occupied at different times the positions of speaker of assembly, chief justice of Prince Edward Island, master of the rolls, and judge of the court of vice-admiralty of Nova Scotia. He possessed a rare combination of intellectual and agreeable qualities. Although he had in his youth relatively few opportunities for education, he succeeded in acquiring a vast fund of knowledge, and at the same time made himself a sound lawyer, whose judgments on the bench were distinguished for clearness and precision. In social intercourse he possessed a rare charm which made him a delightful companion.[1] One of his sons became a judge of one of the superior courts of Great Britain, another was an eminent consul-general of England at New York for many years, inclusive of the trying period of the civil war; and both received the honour of knighthood. Sir Adams G. Archibald, who belonged to another branch of the same family, was also a distinguished figure in later colonial life, as I shall presently show when I come to give some personal reminiscences. Senator T. D.

[1] See an interesting "Life of S. G. W. Archibald" by Israel Longworth, Halifax, N. S., 1881. Also "Historical and Genealogical Record of the First Settlers of Colchester county, down to the present time. Compiled from the most authentic sources. By Thomas Miller, Halifax, N. S., 1873. It shows the large number of descendants of the Archibalds.

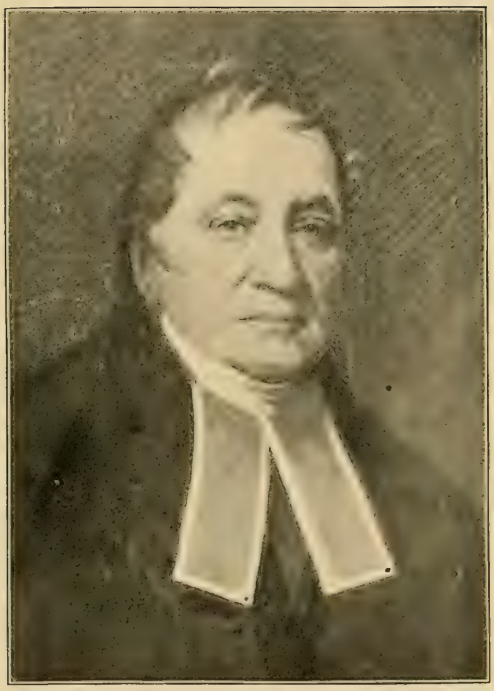
Archibald was also long connected with the commercial interests of Cape Breton and was one of the first members called to the upper house of the parliament of Canada. Judge Archibald of the superior court of the province of Quebec is another able descendant of one of the four brothers, whose coming to Colchester about one hundred and forty years ago was so auspicious an event for Nova Scotia.

Senators McKeen and Miller can also trace their descent from the same settlers. The Allisons, whose names are so honourably connected with the foundation and development of the prosperous educational institution of a high class at Sackville—one of whose descendants is now the able president of the university—also came from the north of Ireland and settled in Horton and Newport.

It will be seen from the official return of the census of 1767 that it gives less than a thousand people as "English,"[1] but this enumeration appears to be in a measure delusive. The return, no doubt, refers only to those persons who had come direct from England since the foundation of Halifax, but as a matter of fact a large proportion of the people called "Americans"—nearly seven thousand—were of pure English origin, like the majority of the people of the old colonies of New England.

V. Early Government of the Province.—Until the foundation of Halifax the government of Nova Scotia was vested solely in a governor who had command of the garrison stationed at Annapolis. In 1719 a commission was issued to Governor Phillips, who was authorized to appoint a council of not less than twelve persons. This council had advisory and judicial functions, but its legislative authority was of a very limited scope. Their acts did not extend beyond temporary regulations relative to trade in grain in the Bay of Fundy, or else local enactments touching the people of the village of Annapolis. The Acadians had the right to choose deputies to act as arbitrators in small matters of controversy between themselves, and an appeal was allowed to the governor-in-council, who sat for this purpose three times a year. The Acadians are described by some writers as extremely litigious, but their disputes appear to have been generally decided among themselves, especially by reference to the priests, and it was rarely that they resorted to their English masters. This provisional system of government lasted until 1749, when Halifax became the seat of the new administration of public affairs. The governor had a right to appoint a council of twelve persons and to summon a general assembly "according to the usage of the rest of our colonies and plantations in America." He was, "with the advice and consent" of the council and assembly "to make, constitute and ordain laws" for the good government of the province. During nine years the governor-in-council carried on the government without an assembly, and passed a number of ordinances, some of which imposed duties on trade for the purpose of raising revenue. The legality of their acts was questioned by

[1] See *supra* p. 19.



JUDGE S. G. W. ARCHIBALD.[1]

[1] The portrait of Judge S. G. W. Archibald is from a photographic copy of an original painting in the possession of Mrs. Archibald of Halifax, who is a daughter of the well-known British Consul-General at New York, and the wife of a son of the late Senator T. D. Archibald, who was long engaged in important commercial enterprises at North Sydney, C.B., in partnership with Blowers Archibald, also a son of the Master of the Rolls.

Chief Justice Belcher—the first chief functionary of the supreme court appointed in Nova Scotia—and he was sustained by the opinion of the English law officers, who called attention to the governor's commission, which limited the council's powers. The result of this decision was the establishment of a representative assembly, which met for the first time at Halifax on the 2nd October in 1758.[1]

Governor Lawrence had the honour of opening the first legislative assembly of Nova Scotia in 1758, but the records of those times also show that he had been opposed to the introduction of a popular assembly on account of the small population of the province (not more than four thousand souls probably), and his conviction that "heats, animosities and dissensions" would be created among the few inhabitants "at a time when the enemy is at our doors, and the whole should join together as one man for their mutual safety and defence." These words were written by the governor during the progress of the Seven Years' War, when a great conflict was being fought between England and France for the supremacy in North America. No doubt, as a soldier, he preferred the practically supreme control he possessed in the administration of provincial affairs by means of a council nominated by the crown and little influenced by the merchants and the people generally. Even on the eve of the first meeting of the assembly he wrote to the Lords of Trade, who administered colonial affairs at those times, that he hoped he would not find among the newly-elected representatives a disposition "to embarrass or obstruct his majesty's service" or "to dispute the royal prerogative," and he added that he feared "that too many of the members chosen are such as have not been the most remarkable for promoting unity or obedience to his majesty's government here, or indeed have the most natural attachment to the province." In his first speech to the legislature he reminded the members of the fleets and armies sent out from time to time for their protection from "a most merciless foe," and expressed the hope that they would "promote the real welfare and prosperity of the crown or, in other words, the real welfare and prosperity of the people." One Robert Sanderson, of whom we know nothing, was chosen as the first Speaker, but he held his office for only one session, and was succeeded by William Nesbitt, who presided over the House for many years. The first sittings of the legislature were held in the court house, and subsequently in the old grammar school at the corner of Barrington and Sackville streets, for very many years one of the historic memorials of the Halifax of the eighteenth century. It was removed eventually to a building on the Market Square, on the spot where the Dominion public building now stands, and here it remained until 1820, when the present parliament house was completed for its reception.

[1] See Appendix G for copy of the order-in-council establishing a House of Assembly in Nova Scotia and a report of the proceedings at the first sitting, with names of the first representatives.

The first assembly obviously surprised Governor Lawrence, who looked forward to its meeting with many misgivings. In one of his letters to the imperial authorities he admitted that the legislature had gone to work in a business-like manner to pass a number of necessary measures with "less altercation than from the seeming disposition of the people he had been apprehensive of." The population of the province was so insignificant at that time that it was only practicable to give a special representation of four members to Halifax and of two members to Lunenburg, while the remaining sixteen representatives had to be elected by the province at large. The representation of the province was increased and new electoral divisions were created according as the population was augmented by settlers from New England and elsewhere. By 1774 the assembly was composed of thirty-two members, representing five counties, the town of Halifax and fifteen townships—the latter division continuing until a very recent date in the history of the province to form a feature of legislative representation.

Soon after his arrival in Nova Scotia Governor Cornwallis established courts of law to try and determine civil and criminal cases in accordance with the laws of England, and by 1774 there were in the province courts of general session similar to the courts of the same name in England; courts of common pleas, formed on the practice of New England and the mother country; and a supreme court, court of assize and general jail delivery, composed of the chief justice and two assistant judges. The governor-in-council constituted a court of error in certain cases, and from its decision an appeal could be made to the king in council. Justices of peace were also appointed in the counties and townships with jurisdiction over the collection of small debts.

Among the builders of Nova Scotia Governors Cornwallis and Lawrence must always occupy a prominent place. They possessed personal qualities which eminently fitted them to establish the dominion of Great Britain in the formative and most critical period of a long neglected colony. Cornwallis appears to have been wise, prescient and energetic in his administration of public affairs, and yet, while Nova Scotia owes him so much, not a monument has been raised in his honour, and we look in vain for his portrait on the walls of public buildings of the province. Nor has full justice ever been done to the meritorious performances of Governor Lawrence, on account of the dark cloud which rests on his name ever since the expulsion of the hapless Acadians.[1] Yet

[1] In "Acadia: Missing Links of a lost Chapter in American History," by Mr. E. Richard, there is a most persistent attempt to blacken the character of Governor Lawrence, but its bitterness shows so obviously that no one is likely to have his judgment warped in recalling the services of a stern soldier who, in considering the security of the province, forgot the dictates of humanity. French historical writers too often look only to one side of the sad story, and fail in presenting such an impartial and judicial aspect of the event in question, as is given by Dr. Kingsford in his account of the expulsion. (See vol. III., cc. 6 and 7).

VIEW OF HALIFAX IN 1777, LOOKING DOWN PRINCE ST., AND SHOWING EASTERN BATTERY, GEORGE AND CORNWALLIS ISLANDS, ETC.

See page 17 n.

no doubt there is something to be said in mitigation of the severe sentence which posterity, largely influenced by the sentiment of pity to which poetry and romance have lent their powerful aid, has passed upon a man, who, in his day, did good service for the crown and for the development of the province committed to his care.

One would fain believe that other measures, less cruel in their consequences, could have been devised and successfully consummated to bring the contumacious Acadians to their senses and make them eventually loyal British subjects. But while we pity these exiles and condemn the sternness of the resolve that drove them from the lands which they had tilled with so much industry, it is well to remember that in the conflicts of old times between the French and English colonies humane councils too rarely dominated, and the annals of *la petite guerre*, which constantly devastated parts of New England, are full of the stories of murdered men, women and children. Even Frontenac, brave soldier and statesman, was ready to carry out a bold plan by which all the British and Dutch people in what is now New York state would be forcibly driven from their homes and their places taken by the French.

Lawrence was a stern soldier like Frontenac and believed that, in the deadly struggle between France and England for the supremacy in North America, the conditions of the province required that he should deal vigorously with a people who obstinately declared themselves neutrals, and might at any moment be found fighting on the side of England's hereditary foe. At the present time, so far removed from the uneasy, insecure condition of things that existed at the beginning of the Seven Years' War, it is not easy to form an impartial judgment on the severe conclusion to which Lawrence came—reluctantly we would fain hope—on the ground of stern military necessity. Lawrence was a man of inflexible purpose who had ever before him the object of establishing the authority of England beyond dispute in a province whose security was committed to his care. He conferred enormous advantages on the province by inducing the migration from New England of a large number of settlers, who possessed those industrious, thrifty qualities which have done so much for the old Puritan colonies from which they came to Nova Scotia in the middle of the seventeenth century.[1]

With the names of Cornwallis and Lawrence must be mentioned that of the first chief justice, the Honourable Jonathan Belcher, the second son of a governor of Massachusetts, a graduate of Harvard College, and a student of the Middle Temple. The early enactments of the legislature were drafted by him and made the basis of the statutory law of the

[1] Notwithstanding my efforts for a number of years I have not been able to find in England or America a portrait of either Cornwallis or Lawrence, who, above all other governors of Nova Scotia, must be regarded as the makers of the province, and entitled to special recognition in this paper.

province. It was fortunate for the formative stage of the legal and legislative history of Nova Scotia that there was at the council board and on the judicial bench a man of such varied accomplishments and such high legal acquirements as Chief Justice Belcher.

The New England element, which was represented by so able a man as Chief Justice Belcher, had not only considerable influence in the early establishment of the province, but must also be credited for the publication of the first newspaper. On the 23rd March, 1752, John Bushell, of Boston, printed the first issue of the *Halifax Gazette*, the pioneer in journalism, since it appeared twelve years before the *Quebec Gazette*. Its chief interest lies in the fact of its early publication, and not in its being an enterprising and interesting medium of news. It was soon superseded as a journal by newspapers in a true sense, and it became in the course of time the purely official gazette of the province[1]

VI. Coming of the United Empire Loyalists.—By 1783 the legislative and legal institutions of Nova Scotia were fully organized, and the province received a large accession of loyal population from the old thirteen colonies, then recognized as the independent federal republic of the United States. In 1784 there were in the province, according to the most trustworthy statistics available, about forty-three thousand souls, of whom over twenty-eight thousand represented "the new inhabitants" or loyalists and disbanded troops, who had taken part in the late war. The "old British inhabitants," or the immigration previous to 1783, are given at fourteen thousand. Only four hundred Acadian-French were living at that time in the country. Of the loyalists, nearly ten thousand were already settled on the St. John River, and eight thousand in the county of Shelburne, where they had very bitter experiences. The new population also included besides black servants or slaves a large number of fugitive negroes, many of whom were deported to Africa at a later time by the imperial authorities. The province was now commencing to emerge from its early difficulties. The dykes, which had fallen to pieces in many places after the expulsion of the industrious and ingenious people who had constructed them, had been partly repaired, and the amount of products raised on the old French farms was yearly increasing. The scattered settlements of the province had few means of communication with each other except by water or "blazed" paths through the woods. In the whole peninsula there was only one great road, that leading from Halifax to Windsor, through Cornwallis and Horton, and thence along the coast of the Bay of Fundy to Annapolis Royal. But the "old inhabitants" generally, after the experience of a quarter of a century, were beginning

[1] See an interesting paper on "Early Journalism in Nova Scotia," by J. J. Stewart, in Coll. of N. S. Hist. Soc., 1887-88, vol. VI. Also Bourinot's "Intellectual Development of the Canadian People," Toronto, 1881, and in *Canadian Monthly*, 1881. Mr. Stewart refers to the presence of the famous printer, Thomas, of Boston for some time in Halifax.

VIEW OF HARBOUR OF HALIFAX IN 1777, TAKEN FROM GEORGE'S ISLAND AND LOOKING UP TO KING'S YARDS AND BEDFORD BASIN.

See page 17 n.

to have confidence in the future of the country and in its capabilities for raising all kinds of cereals and fruits. The Loyalist migration of 1783 commenced a new epoch in the history of British North America. It opened up districts, made additions of a loyal population to the older settlements and gave colonies to the empire. Nova Scotia was divided into two provinces, one of which retained the old name, which had been given to it in King James's day, and the other recalled the Brunswick-Lunenburg or Hanoverian line which had given kings to England. Cape Breton—for the name of Ile Royale disappeared after the fall of Louisbourg—also received a simple system of local government, separate from Nova Scotia. Canada was divided into two provinces, Upper and Lower Canada. The articles of peace, which were signed in 1783, afforded no adequate protection to the men who had fought and suffered for king and country. The weak congress, which then nominally governed the feeble confederation, formed in 1781, had no real influence over the independent states, when the question arose of carrying out the provisions of the treaty and granting an amnesty to the people who wished to be restored to their homes and estates, or to obtain at least some compensation for the same. The legislatures of these states were animated by a purely revengeful spirit, and few, if any, estates were given back to their lawful owners. In many places men were tarred and feathered, and even hanged, for daring to remain in the country. Many thousands had no choice open to them except to seek refuge in Florida, the West Indies, the British Isles, and in the wilderness which still belonged to Great Britain in North America.

"They left the homes of their fathers, by sorrow and love made sweet;
Halls that had rung a hundred years to the tread of their people's feet;
The farms they had carved from the forest where the maples and pine trees meet.

"He left his years of manhood, he left his place of pride;
And she, she left the little room where her first baby died.
Ah, God, how each familiar thing to that fond mother cried.

"The rebels held our homesteads; 'Ours' laid them down in the moss.
The world was loud with their triumph; the woods were dumb with our loss.
They sat on the throne as victors; the throne of our love was a cross.

"'Mid slow, soft-footed things that creep at the edge of the eve and dawn,
The women went with their young ones, as a doe goes by with her fawn,
While the men they loved went on before, guns ready and sabres drawn.

"They passed down the silent rivers which flow to the mighty lake;
They left what they'd made for England (but those who have made can make),
And founded a new Dominion for God and their country's sake."[1]

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[1] These verses are taken from a spirited poem published by Mr. Clive Phillipps-Wolley—now a resident of British Columbia—in Longman's Magazine (London, Eng.), for June, 1897. The poem is imbued with that imperial spirit that animated the Loyalists, and is far above the average of verses yet written by Canadians on the same inspiring subject.

It is impossible to tell exactly how many persons altogether became exiles. All the men who had taken an active part in the war, and were consequently most hated by the successful revolutionists, certainly left the United States. As we know that at the very least twenty-five thousand men fought in the regularly organized royal regiments, we may fairly estimate that between eighty and one hundred thousand men, women and children, were forced to leave and scatter throughout the world. Of this number, between thirty and forty thousand people came to the provinces of the present Dominion. More than two-thirds of the exiles settled in the provinces of Nova Scotia and New Brunswick, the remainder in the valley of the St. Lawrence. The British government granted pecuniary compensation and lands to the Loyalists who had suffered such great losses—almost irreparable in many cases—for the sake of the empire. It took some years before the pecuniary claims of the numerous applicants for aid could be investigated and relief afforded. Many persons felt all the misery of "hope deferred." In 1786 a writer stated that "this delay of justice has produced the most melancholy and shocking events." Eventually the exiles, who made out their claims, were voted by parliament an allowance of nearly sixteen millions of dollars; others received considerable annuities, half pay of military officers, large grants of lands, and offices in the provinces.

In Nova Scotia, the principal settlements of the exiles were in the present counties of Annapolis, Digby, Shelburne, and Guysboro'—so named from Sir Guy Carleton—but a considerable number also found homes in the old settled townships where the American Pre-Loyalists, Irish, Germans and others had established themselves from 1749 until 1783.[1] Nearly all the men who came to Nova Scotia and New Brunswick had served in the royal regiments of the old colonies. The condition of many of the people is described in 1783 by Governor Parr, of Nova Scotia, as "most wretched." They were "destitute of almost everything, chiefly women and children, all still on board the vessels," and he had not been "able to find a place for them, though the cold was setting in very severe." Rude huts were erected for the temporary accommodation of these unhappy people when all the available buildings were crowded. At Shelburne, on the first arrival of several thousand exiles, chiefly from New York, there were seen "lines of women sitting on the rocky shore, and weeping at their altered condition." Some of these people, says Sabine, tried to make merry at their doom, by saying that they were "bound for a lovely country, where there are nine months' winter and three months' cold weather every year"—so little did they know of the climate and resources of their new homes.

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[1] See Appendix H for Colonel Morse's "Return of disbanded Troops and Loyalists, settling in the province of Nova Scotia, mustered in the summer of 1784."

VIEW OF HALIFAX (*circa* 1780).
From the Atlantic Neptune (*See page 16 n.*)

The Loyalist poet Stansbury [1] wrote the following verses from Nova Scotia to his wife to whom he did not present a very encouraging prospect for the future :

" Believe me Love, this vagrant life
O'er Nova Scotia's wilds to roam,
While far from children, friends or wife,
Or place that I can call a home
Delights not me ;—another way
My treasures, pleasures, wishes lay.

" In piercing, wet, and wintry skies,
Where man would seem in vain to toil
I see where'er I turn my eyes,
Luxuriant pasture, trees and soil.
Uncharm'd I see :—another way
My fondest hopes and wishes lay.

" Oh, could I through the future see
Enough to form a settled plan,
To feed my infant train and thee
And fill the rank and style of man ;
I'd cheerful be the livelong day,
Since all my wishes point that way.

" But when I see a sordid shed
Of birchen bark procured with care,
Designed to shield the aged head
Which British mercy placed there
'Tis too, too much ! I cannot stay,
But turn with streaming eyes away.

" Oh, how your heart would bleed to view
Six pretty prattlers like your own,
Expos'd to every wind that blew ;
Condemn'd in such a hut to moan.
Could this be borne, Cordelia, say ?
Contented in your cottage stay."

" 'Tis true, that in this climate rude,
The mind resolv'd may happy be ;
And may, with toil and solitude,
Live independent and be free.
So the lone hermit yields to slow decay,
Unfriended lives—unheeded glides away.

" If so far humbled that no pride remains,
But moot indifference which way flows the stream ;
Resigned to penury, its cares and pains,
And hope has left you like a painted dream ;
Then here, Cordelia, bend your pensive way,
And close the evening of Life's wretched day."

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[1] See " The Loyal verses of Joseph Stansbury and Doctor Jonathan Odell, relating to the American Revolution. Now first edited by Winthrop Sargent, Albany, 1860." A rare book ; No. VI. of " Munsell's Historical Series."

At Guysboro', the first village which was hurriedly built by the settlers was destroyed by a bush fire, and many persons only saved their lives by rushing into the sea. The Loyalists had also to suffer much in the valley of the St. John. Many of the people spent their first winter in log huts, bark camps, and tents covered with spruce, or rendered habitable only by the heavy banks of snow which were piled against them. A number of persons died through exposure, and "strong, proud men," to quote the words of one who lived in those sorrowful days, "wept like children," and lay down in their snow-bound tents to die.

The difficulties of the settlers appear to have been aggravated by doubts as to the location of their promised grants of land, and the cold-

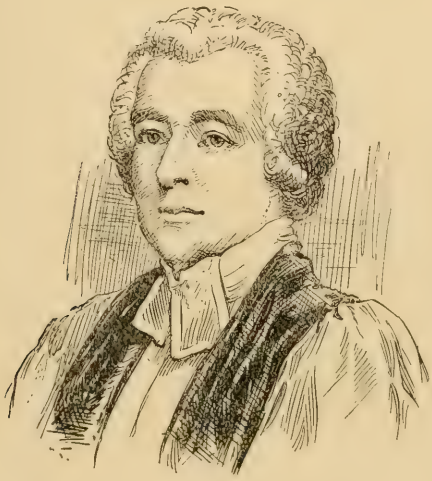
GIDEON WHITE.[1]

ness and jealousy with which they were received by the old settlers on the St. John River, who, in the majority of cases, had little sympathy with the resolute loyalty that had driven them from their old homes in the United States. However, the provincial authorities, in accordance with their instructions, did their best to ameliorate the condition of the refugees. Supplies of the necessaries of life were granted to the people for three years. At Port Roseway, now Shelburne, and at the mouth of the River St. John—to quote the words of Colonel Morse, in 1784—"astonishing towns have been raised in less time, perhaps, than was ever known in any country before." Shelburne was for some years a place of great expectations, and had a population larger than that of Quebec and

[1] From a miniature in possession of N. W. White, Q.C., Shelburne.

Montreal combined, but it transpired after a short and bitter experience that it had none of the elements of stable prosperity, largely owing to the rugged nature of the country around it: and when the British government stopped the supplies and withdrew the troops, its people began to leave and seek homes elsewhere in the provinces, and a few even in the United States. A pretty town now nestles by the side of the beautiful and spacious harbour which attracted the first ill-fated settlers, and its residents point out to the tourist the sites of the buildings of last century, one or two of which still remain, and show you many documents and relics of the days when the old inhabitants were full of hope.

If we review the lists of the Loyalists who settled in the maritime

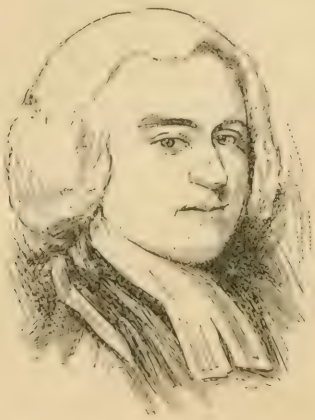


BISHOP CHARLES INGLIS.[1]

provinces, we find the names of many men who had distinguished themselves in divinity, law, medicine and commerce in the old colonies, especially in New England. Among them, there were some who were direct descendants of the famous Puritan migration of 1629-1640. A few were sprung from the Huguenots—the Bayards for instance—who fled from France on the revocation of the edict of Nantes. I shall only now recall the names of Inglis—who gave two bishops to the Church and a famous general to the British army—Mather Byles, an ancestor of Senator Almon—Isaac Wilkins, the ancestor of several men distinguished in law and politics—Gideon White, one of the founders of Shelburne and great-grandson of the first born of New England—John Howe, the

[1] This portrait of the first colonial bishop is taken from one in the Magazine of American History, vol. ix., p. 403. It is that generally given in all books relating to the Bishop.

father of the great Nova Scotian statesman, and one of the printers of the Boston *News Letter*—Miner Huntington, who was connected with the Cromwells—Foster Hutchinson, a Nova Scotia judge and brother of the famous historian and loyal governor of Massachusetts—Sampson Salter Blowers, a chief justice—Cunard, the father of the pioneer in successful steam navigation of the Atlantic—Timothy Ruggles, who had been president of the stamp act congress, of 1765—Halliburton, one of whom became a chief justice—Marshall, one of whom was a speaker of the assembly and another a well known judge—Johnston, the famous leader of the Conservative party—Jones, one of whose descendants is a well known resident of Halifax, and was a member of Mr. Mackenzie's Liberal ministry of 1873-1878—Vail, one of whose descendants was a minister in the same government. Fielding, Savary, Gesner, Seaman, Moody, Brenton,



REVEREND DR. MATHER BYLES.
From an old portrait.

Barclay, Ryerson, Nutting, Stuart, Hatfield, Church, Russell, Ray, Robie, Robertson, Blackadar, Blanchard, Van Buskirk, Coffin, Wickwire, and many other familiar names will be found in the annals of the province towards the closing years of last century. Their descendants are still influential in their respective vocations and professions at the present day. A Fielding is the able finance minister of the present dominion government; a Russell is a learned professor in Dalhousie college, and one of the representatives of Halifax in the Canadian House of Commons; a Church is a member of the provincial government; a Ray is a member of the legislative council; a Savary is a judge in the historic county of Annapolis where he relieves his judicial duties by a close study of local history; a Blackadar is still connected with the well known Halifax journal *The Acadian Recorder*, which was founded by Anthony

Henry Holland as early as 1813, and published by the Blackadars since 1837; a White was for some years a representative of the historic county of Shelburne in the dominion parliament, and is one of the leading barristers of the western district.

The town of Sydney had just been founded by Lieutenant-governor Joseph Frederick Wallet DesBarres, in 1784, as the capital of the new colony of Cape Breton, when a body of loyalists arrived under the direction of Abraham Cuyler, who had been mayor of Albany in the state of New York. Among these new settlers were Colonel Peters, Captain Jonathan Jones, Robertson, Lorway, MacAlpine, Moore, Crowdie, Grant, Haire, Gesner, Gammell, Brown, Leonard, and others, whose descendants are still to be found at Sydney, Bedeque, Louisbourg, St. Peters, and elsewhere.[1] Probably two hundred and forty persons of this class settled in the island.

It is an interesting coincidence that on those very shores, which the Acadian exiles of 1755 left in such misery, there landed the far greater proportion of the Loyalists almost in the same spirit of despondency which had been felt by their predecessors in misery less than thirty years before. More than a century has passed since the occurrence of those sad events in the history of America, and the Acadian provinces which are so intimately associated with the sufferings of those exiles have become prosperous and happy communities. On the meadows, won from the sea by the Acadian farmers, there are now many happy homes, and the descendants of the old French occupants of Acadia have villages and settlements within the limits of the ill-defined region, which was known as *Acadie* in the days of the French regime. In the beautiful valleys of the St. John and Annapolis, by the side of many spacious bays and picturesque rivers of Nova Scotia and New Brunswick we find the descendants of the Loyalists, living in content and even affluence—occupying the highest positions of trust and honour. By the St. Lawrence and the Canadian lakes we see also many thousands of people who proudly trace their lineage to the same migration; who have the same story to tell of suffering and trial in the past, of courage and patience triumphant in the end, of the wilderness made to blossom as the rose. In the records of industrial enterprise, of social and intellectual progress, of political development, we find the names of many eminent men, sprung from the people, to whom Canada owes a deep debt of gratitude for the services they rendered her in the formative period of her chequered history. If the provinces of British North America have been able at most critical periods to resist the growth of purely republican ideas, and to adhere to England, credit is largely due to the principles which the Loyalists handed down to future generations after their migration of the last

[1] See "A History of the Island of Cape Breton." By R. Brown, F.G.S., F.R.S.S., London, 1869. Also Bourinot's Cape Breton.

century to the Atlantic provinces and the country in the valley of the St. Lawrence and great lakes.[1]

VII. **Scotch Settlement.**—The first attempt to colonize Nova Scotia with Scotch settlers was made by Sir William Alexander under the royal charter of 1621. His son took out in 1628 about seventy of his countrymen, whom he placed on the north-western or Granville side of the basin of Port Royal, under the protection of a fort which he erected on the site of the old French corn-fields. Nothing came of the experiment, as Nova

A BADGE OF THE BARONETS OF NOVA SCOTIA.

Scotia was again ceeded to the French under the treaty of St. Germain-en-Laye, in 1732, and the Scotch fort was abandoned. A number of the settlers had died during their short residence in the country and the remnant went to New England or returned to Scotland.[2] The only memorials that remain of this unsuccessful effort to found a permanent Scotch settlement in Acadia are the present name of the province and the title which was established by the king in 1625 to assist Alexander's plan

[1] A fairly accurate list of the principal Loyalists who settled in the province of Nova Scotia, will be found in "Biographical Sketches of Loyalists of the American Revolution, with an Historical Essay, by Lorenzo Sabine. In two volumes. Boston Ed. of 1864." A list of Boston Loyalists, who migrated to England and her colonies, can be also seen in the third volume, (pp. 175-180) of "The Memorial History of Boston, edited by Justin Winsor, Boston, 1881." See also an article by the present writer on "The Loyalists of the American Revolution" in the *Quarterly Review*, October, 1898. Also an article by the same in *The Canadian Magazine*, April, 1898.

Mr. George Johnson, the able Dominion Statistician, in a letter to the author, estimates that the number of the descendants of the Loyalists reached, in 1891, over five hundred thousand in the Maritime provinces, and over seven hundred thousand for all Canada. See "Trans. of the U. E. Loyalists' Association of Ontario," for 1895, pp. 73-74.

[2] See a valuable paper on Sir W. Alexander's experiment by Dr. Patterson in the Trans. Roy. Soc. Can. vol. X., Sec. 2. Also, *supra*, p. 12*n*, where allusion is made to a probable descendant of one of the Scotch settlers who remained in Nova Scotia.

of colonization. Baronets of Nova Scotia were to be created to the number of one hundred and fifty on condition of paying a large fee and settling considerable grants of land attached to the title. Such a scheme was quite in accordance with the spirit of the age and it might have brought some colonists to the peninsula as well as to Cape Breton, included in the charter, had Charles of England not handed Nova Scotia back to France in his desire to please her king.[1] The title continued to be

[1] Whilst this work was in the printer's hands, Sir E. MacKenzie-Maunde-Thompson of South Yarra, Melbourne, Australia, has kindly sent me a copy of an interesting pamphlet by Major Francis Duncan of the Royal Artillery on "The Royal Province of New Scotland and her Baronets," [1878], from which I make the following extract: "The colonial policy of James I. had in it much of the paternal, as was to be expected in days when the rights of kings were considered divine, but it was also eminently shrewd, far-seeing and commercial. To persuade men to quit their homes, however poor and rough, was in the beginning of the seventeenth century a very different thing from what it is now . . . . . The figuratively mailed hand had to seize the land before the naked hand could till in safety. The emigrant to a soil unsettled, uncivilized and without law, dared not go out a lonely pioneer, but must be one of a strong and sympathetic band. Temptation of no ordinary degree was needed to secure a good stamp of emigrants. In the case of New Scotland it took the form of titular honours, combined with prospective possession in a land which a patriotic king had determined should have a special alliance and sympathy with the country of his birth, James I. conceived the scheme; it was uppermost in his mind when he died; but it fell to his son to carry it into execution." Three years later than the charter given to Alexander for the colonization of Nova Scotia, "on the 18th October, 1624, King James announced to the privy council his intention of erecting the hereditary order or dignity of *Baronet* within the kingdom of Scotland *for the purpose of advancing the plantation of Nova Scotia.* With some fervour he added that he proposed to make this undertaking, of which he was so hopeful, a *work* of his own, and he felt confident that from so noble a purpose *the whole nation* would have honour and profit. In their reply[1] the Lords of the privy council showed that they clearly recognized the king's patriotic motive, for they alluded to 'His Majesty's great affection toward his ancient kingdom of Scotland, and his most judicious consideration in making choice of so excellent a means, both noble and fit, for the good of the same.'"

"On his death-bed,[2] with plaintive but earnest words, the king again alluded to what was still uppermost in his thoughts, although to his son was to fall the *privilege* of carrying out his scheme. He spoke of it as a *good* work, a *Royal* work, and one for the good of *the kingdom in general*, as well as for the particular interest of every baronet.'

"It will thus be seen that King James I. was actuated by pure motives in founding this order; that he desired to establish across the Atlantic a country which should be a complement to his old kingdom of Scotland, and which should be knit to it by special ties of commerce and of sentiment, and that he endeavoured by the offer of titular honours, and promises of land, to tempt men to emigrate, whose social position would ensure them a considerable number of followers, and assist them in maintaining their authority as leaders in the distant community which it was proposed to form. It is to be regretted that partly through misunderstanding of the original scheme—partly through the vicissitudes of subsequent conquests—the special connection between old and new Scotland, except in the districts of Cape Breton and Pictou, has never been established. The special rights given to the baronets on their creation have long fallen into desuetude, and, except with the consent of the provincial government, could never be revived."

[1] Nov. 23, 1624. [2] March 24, 1625.

conferred without reference to the conditions of the original patent until the legislative union of Scotland with England, when such separate orders were superseded by the one general title of baronet of the United Kingdom.[1]

A number of natives of Scotland came to Halifax during its early days, and many of the New England immigrants of 1760-62 were of Scotch descent.[2] As early as the 20th March, 1768, the North British Society was instituted in Halifax, and has had a continuous and successful career to the present time. On the same day St. Andrew's Lodge of Free and Accepted Masons was organized and subsequently chartered.[3]

The great Scotch immigration, which has exercised such an important influence on the eastern counties of Nova Scotia—and I include Cape Breton of course—commenced in 1773, when over thirty families arrived from Scotland and settled in the present county of Pictou, where a very few American colonists from Pennsylvania had preceded them.[4]

[1] By a royal warrant of Charles I. in 1629 the baronets were entitled to wear as a "personal decoration," an orange tawny riband and badge—viz.: in a scutcheon, argent, a St. Andrew's cross, azure, thereon an inescutcheon of the royal arms of Scotland, with an imperial crown above the scutcheon and encircled with the motto "Fax Mentis Honestae Gloria," being the motto of Henry Prince of Wales, the eldest son of the royal founder of the order." (See Burke's Peerage and Baronetage, p. 39.) The title is still borne by heirs of the baronets created in the seventeenth century. For instance, the Earl of Aberdeen, late governor-general of Canada, inherits the title from Sir John Gordon of Haddo, who was created in 1642. The premier baronet is Sir Robert Glendonwyn Gordon of Letterfourie, Banffshire, by virtue of his descent from that Sir Robert Gordon of Gordontown, a younger son of the Earl of Sutherland, who was the first person dignified with the title in 1625. The Earl of Granard dates his baronetcy to that of Sir Arthur Forbes, who was created in 1628. Sir W. Stuart Forbes, of Pitsligo, can trace the title to 1626; Sir Duncan Edwyn Hay, of Smithfield and Haystoun, Peeblesshire, to 1635; the baronetcy of Sir Arthur Henry Grant, of Monymusk, was created as late as 1705; that of the Earl of Minto (Elliot), now governor-general of Canada, in 1700; in both cases, before the union of the two kingdoms in the days of Queen Anne.

For a list of the original baronets of Nova Scotia, see "Royal Letters, Charters and Tracts relating to the colonization of Nova Scotia and the institution of the order of knights baronet of Nova Scotia, 1621-1638. Published by the Bannatyne Club, Edinburgh, 1868." The sketch of the badge in the text is taken from one sent me by Sir E. M. Maunde-Thompson, and differs slightly from the one in Debrett. In most cases the badge is described as oval in shape, but the sketch in the text shows that it was not necessarily so.

[2] In 1767, according to the official return of that year, there were only a hundred and seventy-three persons given as Scotch, but among the large proportion of people recorded as Americans and Irish there were a considerable number of Scotch origin. See Appendix F.

[3] See "Annals of the North British Society of Halifax, N.S., for 125 years; compiled by T. S. Macdonald, Halifax, N.S., 1894." The first members of this body were as follows: John Gillespie (Moderator or President), John Taylor, James Clark (Secretary), William Scott, William McLennan, Robert Kills, John Fraser, Walter Harkness, John Geddes, Daniel Morrison, James Thomson, John McCrae, William Luke, and Thomas McLennan.

[4] See Dr. Patterson's "History of the County of Pictou," Montreal, 1877.

In later years a steady tide of Scotch population flowed into eastern Nova Scotia and did not cease until 1820 and even later. The first direct migration of Scotch arrived at Sydney in August, 1802. A great current of population then began to flow into Cape Breton from the islands and northern parts of Scotland where the great landlords wished to rid their estates of their peasantry and turn them into pasture lands for the raising of cattle and sheep, just as in later times they have driven off the humble crofters from lands which they wish to make preserves for deer. This Highland migration settled the counties of Pictou and Antigonishe, in Nova Scotia, and then began to find its way to Cape Breton, at first to the western coast. From the close of the last century, when this population first came into the country, until the reunion with Nova Scotia when it began to practically cease, at least twenty-five thousand persons are estimated to have settled on the public lands, waste for so many years. Cape Breton from that time was no longer a French but a Scotch colony, whose old homes must be sought in the Hebrides, on the rocky, windy shores of far away Lewis or Stornoway, or in some rude sheiling by the side of a lonely loch or stream amid the mountains of northern Scotland. The Scotch population in the early days of settlement led quiet uneventful lives on that remote island of eastern North America, though sometimes their thoughts went back to the islands of their native land.

> "From the lone sheiling of the misty island
> Mountains divide us, and a waste of seas,
> Yet still the blood is strong, the heart is Highland
> And we, in dreams, behold the Hebrides.
>
> "We ne'er shall tread the fancy-haunted valley
> Where, 'twixt the dark hills, creeps the small clear stream,
> In arms around the patriarch banner rally,
> Nor see the moon on royal tomb-stones gleam.
>
> "When the bold kindred, in the time long vanished,
> Conquered the soil and fortified the keep.
> No seer foretold the children should be banished
> That a degenerate lord might boast his sheep."[1]

But memories of the "lone sheiling of the misty island" were soon effaced by the struggle for existence in the new world, and the descendants of the Highlanders even learned to forget their poverty and wretchedness and the greed of the great lords under whom they lived, and to congratulate themselves on the complete freedom which they enjoyed on lands which were now their own, and which with industry and patience gave them at least a comfortable subsistence. The waters that surround the island, and the numerous streams which everywhere find their way to the sea, abound in fish of all kinds, and it was easy for them to live comfortably in this

[1] These verses are taken from a translation of an alleged Gælic Canadian boat song that appeared in *Tait's Magazine* for June, 1849.

new land compared with the one they had left. As the country grew older, as its means of communication increased—very slowly it must be admitted in this long neglected island—as its great coal mines were developed, the appearance of Cape Breton improved much for the better. Many of the children of the old settlers went to the American cities, and returning from time to time to their old homes, brought with them fresh ideas which have already made their influence felt, even in the remote Scotch and Acadian settlements. Sir William Alexander's dream of a new Scotland has been realized in a measure in the eastern parts of the province where it was his ambition to be "lord paramount." But now, instead of the titled proprietors, who were to divide the country amongst

REVEREND DR. FORRESTER.

them, instead of the baronets with their glittering insignia and armorial bearings, we have stalwart Scots, clad in home-spun, or broad-cloth on holidays, and answering to the historic names of Archie Campbell, Donald McDonald, Alec Fraser, Dan Morrison, Rory McLennan, Sandy McPherson, "and others of that ilk," very familiar to the Scottish glens and lochs and mountains. The total Scotch population of the country, east of Halifax and the Avon is about one hundred and twenty-five thousand, of whom at least sixty thousand are settled in the four counties of the island of Cape Breton.[1] The Scotch population for a century of our history have given to the province many men famous in education,

[1] See Brown's Cape Breton; Bourinot's French memorials of Cape Breton, and an interesting article in the *Halifax Herald* for August 11, 1892, on "Glimpses of Cape Breton" by Professor B. Rand, of Harvard University.

science, letters, divinity, law and politics. Notably the Reverend Doctors MacGregor and MacCulloch—to the latter of whom Pictou Academy owes its existence—Chief Justice Sir Brenton Halliburton, Chief Justice Sir William Young, Judge Haliburton, ("Sam Slick"), the Reverend Dr. Forrester, superintendent of education for years, the Honourable James MacNab, long prominent in the ranks of the Liberal party, Sir James William Dawson, the scientist, Principal Grant, now the able head of Queen's University at Kingston in Ontario, the Reverend Dr. Patterson, the archæologist and historian—a descendant of one of the first Scotch settlers of Pictou—the Honourable A. W. McLelan, once finance minister of Canada and lieutenant-governor of Nova Scotia, Dr. A. H. Mackay, present superintendent of education, Mr. Simon H. Holmes, once a Conservative premier, the Reverend Dr. Forrest, now head of Dalhousie College, the Honourable William Ross, minister of militia in the dominion government of 1873-1878, Chief Justice Macdonald of the provincial supreme court, Professor MacGregor of Dalhousie—a grandson of the Reverend Dr. MacGregor—Mr. Justice Henry of the supreme court of Canada, Mr. Justice Sedgwick of the same court, whose brother was an eminent moderator of the Presbyterian Church of Canada, Bishops Fraser, McKinnon and Cameron of the Roman Catholic Church, Premier Murray of the present Liberal ministry of the province, Lieutenant-Governor McInnes of British Columbia, and very many others who might be named to show how important has been, and is still, the influence of the Scotch element on the political, material, moral and intellectual development of the province.

VIII. Influx of Irish.—I have now briefly referred to the important migrations of the Pre-loyalists, Loyalists and Scotch settlers from whom by far the greater proportion of the present inhabitants of Nova Scotia have sprung. It must not be supposed, however, that I intend to do any injustice to the Emerald Isle because I have not so far spoken of its influence on our people.

The Irish have never formed a large class as compared with the English, Scotch and New England immigrants. I have mentioned that some Ulster Presbyterians of Scotch descent settled in the present county of Colchester and in other parts of the province at an early date. The Roman Catholic Irish only came in later times, chiefly to the city and county of Halifax, where they have been for years an influential, and, on the whole, prosperous class. We can recall many men of this versatile race who have distinguished themselves in politics, in commerce, in law, in divinity, and in letters. Need I tell you of the Uniackes, more than one of whom was famous for eloquence? Of Lawrence Doyle, who illustrated the wit and genius of his nationality? Of Sir Edward Kenny, an example of great success in commerce and a member of the first dominion government, whose sons have won distinction in the church and in parliament?

The name of Uniacke recalls gentlemen distinguished in law, politics, banking and divinity, in the annals of Nova Scotia for a century, and even to the present time. The family are of Irish origin, and the first of the name to win fame in the province was Richard John[1] who became speaker of the assembly, attorney-general and member of the council. He held the position of attorney-general, with a seat in the council, for over thirty years, and had strong claims to the chief justiceship of the province, but he never reached the legitimate goal of an able lawyer's ambition. In his short legislative career as a member of the assembly, he showed that he comprehended the principles of popular government, and was found on more than one occasion asserting the privileges and rights of the people's house, though in later years as chief law officer of the Crown he showed Tory learnings at times. He had an Irishman's sense of humour, and was a fluent speaker, though he never reached the height of eloquence possessed by his fourth son, James Boyle. His eldest son, Norman Fitzgerald, became an attorney-general and judge in Lower Canada.[2] His third son, Richard John the younger, became a judge of the supreme court. In 1827 he moved a resolution which had the result of abolishing the test oaths, which practically shut out Roman Catholics from the legislature. Another member of the same family, James Boyle Uniacke, was even more distinguished at a later time, when responsible government was being vigorously fought for by Howe, Young, Hunting-

[1] R. J. Uniacke came first to Nova Scotia at an early age and was arrested in Cumberland county, in 1777, when a number of persons sympathized with their countrymen in New England and were engaged in treasonable practices against England. He was released and went to Ireland, where he studied law. He went then to Nova Scotia where he was given the high legal positions mentioned above. He died in 1830 in Halifax. For the only full account of the life of R. J. Uniacke, (the elder), see vol. IX. of collections of N. S. Hist. Soc. (1895), in which Senator Power has compiled a great many interesting details never before given to the public. Few families in Nova Scotia can claim a more distinguished lineage than the Uniackes. A writer in the *Youghal Parochial Magazine* gives the following account of the origin of the name: "Soon after the great Geraldine race had settled in Ireland, their chieftain in the west and south, who owned the whole territory called Desmond, was at war with one of the native princes. A desperate attempt was to be made on some castle or town wall, or a narrow breach entered where one should lead the way. When the proposal was made to the whole army as to who would undertake this exploit, or 'lead the forlorn hope,' as it would be called in modern times, a young man, named Fitzgerald, immediately came forward and undertook the venture. He succeeded beyond the expectations of all; and as no one else had seemed inclined to attempt the feat, he was ever afterwards called '*Unicus*' (the only one); and this epithet, which assumed the form of 'Unick' or 'Unak' for years among the posterity of the brave knight, gradually glided into the present family name of 'Uniacke.'" The mottoes of the family are "Unicus Est" and "Faithful and Brave."

[2] Morgan's "Celebrated Canadians" falls into the error of confounding this son with the father who was never attorney-general of Lower Canada. See "The New Brunswick Historical Magazine" for December, 1898 (p. 385), where Norman F. Uniacke's death at Halifax in 1846 and details of his career are given.

ATTORNEY-GENERAL R. J. UNIACKE

See note, p. 41.

ton and others. Uniacke joined the liberal forces at a critical time, when Sir Colin Campbell, an honest but obstinate old soldier, and confirmed Tory, was throwing obstacles in the way of the establishment of responsible government. In later years Howe and Uniacke became colleagues in several administrations, and when the latter died the great Liberal paid to his memory an eloquent tribute. "His noble form," said Howe, "easy deportment, graceful manners, and ready flow of language, are familiar to many. . . . A mind ever fruitful, a tongue ever eloquent, humour inexhaustible, and pathos which few could resist, were among

ARCHBISHOP CONNOLLY.

the gifts or attainments of my honourable friend. His colloquial powers were even more marvellous than his forensic or parliamentary displays. He charmed the senate by his eloquence; but how delightful was he when surrounded by a knot of friends beneath the gallery or seated at the head of his own hospitable board." But the very exuberance of his social gifts, his irrepressible love for companionship, during the close of his brilliant life, impaired the vigour of an intellect which might have achieved much more for Nova Scotia under happier and wiser conditions.[1]

[1] I am indebted to Mr. James J. O'Brien, secretary of the Irish Charitable Society, for the portraits of the two Uniackes that appear in this book. I understand that the portraits in the possession of this society are taken from the original paintings in the possession of the Rev. J. B. Uniacke, of Mt. Uniacke, the well known country seat of the family. Attorney-General R. J. Uniacke was the first president of this society, which was founded on the 17th January, 1786, and continues to show every evidence of usefulness. The other officers were: vice-president, Thomas Cochran; first assistant vice-president, G. W. Sherlock; treasurer, Charles Hill; and secretary, Gerald Fitzgerald. For interesting details of distinguished men connected with this historic society, see a paper by Mr. O'Brien contributed to the *Halifax Herald* of the 17th March, 1896.

I might also refer to the Tobins, once conspicuous in public affairs, as the annals of the old council chamber show; to the Powers, one of whom is now an energetic and able member of the upper house of the Dominion; to Judge McKeagney, of Sydney, who died a member of the supreme court of Manitoba. Martin J. Griffin, formerly a clever journalist, and now an accomplished librarian of the dominion parliament, is of the same origin. Archbishop Connolly, that generous, whole-souled, hospitable prelate, was not a Nova Scotian by birth, but he always identified himself with its best interests and must claim honourable mention here. The present archbishop, Dr. O'Brien, is a native of

SIR EDWARD KENNY, KNT.

Prince Edward Island, but we must also place him on the list of those adopted sons of Nova Scotia who have won a reputation not only in the church but in letters. The present lieutenant-governor, Mr. Daly, bears also an honoured Irish name, long identified with colonial history, and all Nova Scotians will admit that the province was exceptionally favoured when he was chosen to preside at government house with that ability, dignity and discretion, which place him deservedly in the foremost rank of dignitaries who have filled the same position since it was opened to the laudable ambition of Canadians by the formation of the Dominion.

HON. JAMES BOYLE UNIACKE.

See note, p. 41.

II.

Establishment of the Great Churches.

I. Roman Catholics.—This review of the founders of Nova Scotia would be very incomplete, did it not include some mention of the great influence exercised on the social and moral development of the people by the clergy of various denominations in the early days of the province. The French missionaries to Acadia were necessarily the first to enter on the field of religious effort within the limits of the present dominion of Canada. Two priests, one of whom was Father Aubry, as well as two Huguenot ministers, accompanied Sieur de Monts in 1604, and religious controversy is said by Champlain to have raged, consequently, with much vehemence at Port Royal. The Huguenots, however soon disappeared, and the Jesuit Fathers, Pierre Biard, Ennemond Massé, and Guertin, and Brother Du Thet entered into the wilds of Acadie between 1611 and 1613. The first convert among the Indians, the old Micmac Sachem Membertou, a steadfast friend of the French colonists, was brought into the church by Father LaFlèche. The ruthless freebooter Argall, of Virginia, in 1613 broke up the little mission near the mouth of the Penobscot (Pentagoët) and the settlement on the western bank of the lovely basin of Port Royal. In the course of time, as the Acadian settlements grew up in the province, Récollet and other priests were sent to the province by the ecclesiastical authorities at Quebec, and accounts have come down to us of faithful and unselfish devotion to their flocks. These French missionaries were loyal to France previous to 1755, when the Acadians were expelled, but only one of them, LeLoutre, appears to have forgotten the duties of their peaceful office, and acted as a dangerous secret emissary of the French government. One of the most notable missionaries was Antoine Maillard, who was vicar-general at Louisbourg until the capture of the town by the English in 1758, when he was invited to come to Halifax and assist the government in the pacification of the Indians of the province. On his death in 1762, he was succeeded by Father Bailly, an earnest, useful

missionary, who did good service in reconciling the Indians to British rule. At a later time, when the Acadian settlements were populous and prosperous, the Abbé Sigogne, a most scholarly priest, made for himself an historic name for the fidelity and ability which he showed for nearly fifty years in the western parts of the province.

For some years after the foundation of Halifax, the British authorities passed various statutes which prevented Irish or English speaking Roman Catholics from holding titles to land, building churches, or obtaining the ministrations of their own clergy, although there was a large number of Irish, nearly all Roman Catholics, living in Halifax. In 1783 these obnoxious regulations, chiefly inspired by the New England element that so largely prevailed in the province, were repealed, and in 1784 the frame of the first Roman Catholic church was raised in the capital on the site where now rises stately St. Mary's Cathedral, on Spring Garden road, and in 1785 the Reverend James Jones, the first Irish priest in Nova Scotia, was given charge of the parish. Other useful workers in the infancy of the Irish Catholic Church in the peninsula of Nova Scotia were Fathers Power, Grace, Whelan, and J. McDonald. The founder of the Trappist Monastery at Tracadie, Father Vincent, was also a prominent worker in those early days.

The first priest who came to Nova Scotia in connection with the Scotch migration was the Reverend James McDonald, who arrived in Pictou in 1791, and laboured there and in other places. Father Angus Bernard McEachran, afterwards bishop of Prince Edward Island, also ministered at a very early date to the spiritual wants of the Roman Catholics of eastern Nova Scotia and Cape Breton, especially of the Gulf shore. The first Highland Catholic Church in Nova Scotia was St. Margaret's at Arisaig, and was begun and built of logs in one day. Father Alexander McDonald—not the vicar-general of the same name at a much later time—became the first regular pastor of St. Margaret's in 1802, and for over twelve years divided with Father McEachran the labour of ministering to the religious necessities of the Scotch and English speaking Catholics of the eastern parts of Nova Scotia and Cape Breton. In later years the following priests were the workers: Fathers Gaulin, consecrated Bishop of Kingston in 1832; Thomas Chisholm, Colin Grant, James Grant, William Dollard, afterwards first bishop of New Brunswick; William Fraser, later a bishop; William McLeod, Neil McLeod, afterwards vicar-general, whom the present writer in his boyhood often met at East Bay, and I must add the present venerable parish priest of Sydney, Father Quinan, loved by Protestant and Catholic alike.

The first missionary to labour among the Acadians in Cape Breton from 1798 to 1808 was Father Gabriel Champion who was driven by the revolution from Avranches, in France. Later workers in the same field in Cape Breton were: Fathers Amable Richard, Antoine Manseau,

Magloire Blanchet, the bishop of Walla-Walla in 1848, who transferred his see to Nesqualy in 1850, and died at Vancouver in 1887; Julien Courteau, Le Jamtel, Auguste Lairey, Mgr. Gaulin, mentioned above; Hyacinthe Hudon, afterwards vicar-general of Montreal; J. B. Potvin, J. B. Maranda, Joseph Trudel and M. Vincent, the founder of the Trappist monastery at Tracadie.[1]

The most notable incident in the beginning of the present century was the arrival of the scholarly, earnest priest, Reverend Edmund Burke, who had for years been a faithful worker in the provinces of Canada.[2] He performed a meritorious work for religion and education among the

BISHOP BURKE.

people for whom he laboured so conscientiously for nearly twenty years. In 1817 he was appointed bishop of Zion, and first vicar-apostolic of Nova Scotia, though he was not consecrated until the following year. He was succeeded as vicar-apostolic by the Reverend William Fraser, who became in 1842, bishop of Halifax[3]—including then Nova Scotia and Cape Breton—

[1] For these minute details of Roman Catholic missions in eastern Nova Scotia, I am indebted to Vicar-General Quinan, D.D. (Laval).

[2] "Memoirs of the Right Rev. Edmund Burke, Bishop of Zion, first Vicar Apostolic of Nova Scotia, by the Most Rev. Cornelius O'Brien, D.D., Ottawa, 1894". 8vo. (Illustrated). This interesting little volume contains in the appendix "a partial list of missionaries who laboured in Acadia from 1604 to the expulsion, 1755", as well as "a complete list of priests who laboured in the mission of Nova Scotia", which included Nova Scotia, Cape Breton, Prince Edward Island and the eastern part of New Brunswick, from the expulsion, 1755, to the death of Bishop Burke, 1820.

[3] As some confusion exists as to the actual date of the foundation of the Roman Catholic See of Halifax, I give the following note from His Grace Archbishop

and when he was transferred in 1844 to the new diocese of Arichat, the Right Reverend William Walsh, who had been his coadjutor, became his successor in the see of Halifax, and, in 1852 the first archbishop. He organized the diocese very thoroughly, and was an important entity in the affairs of the province, where he died in 1858. His successors in the archiepiscopal see have been the Most Reverend Thomas Connolly, Michael Hannan, and Cornelius O'Brien. The diocese of Arichat as established in September, 1844, comprised the three eastern counties of Pictou, Antigonishe, and Guysboro', and all of the island of Cape Breton. Bishop McKinnon succeeded Bishop Fraser in 1852, and when he died in 1877, the Right Reverend John Cameron, who had been his coadjutor since 1870, was elevated to the see over which he continues to preside with energy and ability. In 1886 the title was changed from Arichat to Antigonishe, where the bishop resides and has a fine cathedral. The college of St. Francis Xavier, founded by Bishop McKinnon in 1853, is also established in the same pretty town, embowered in willows, and surrounded by picturesque hills with well cultivated slopes.

The Roman Catholics are now the most numerous denomination in Nova Scotia. By the census returns of 1890-91 they numbered over a hundred and twenty-two thousand souls. The number of priests at the present time in Nova Scotia proper and Cape Breton island are a hundred and eight with about a hundred and seventy-three chapels to attend.

II. **Church of England.**—I have given priority to the Roman Catholic Church because its missionaries were the pioneers in Acadia. The Church of England, however, had its teachers in the province, when Nova Scotia became an English possession by the treaty of Utrecht, and eventually when Halifax was founded it became practically a State church for very many years in the formative period of English institutions. Army chaplains necessarily for a while performed religious services at Annapolis, but the Society for the Propagation of the Gospel extended their operations to the province as early as 1722. The Reverend Mr. Watts was the first school-master and missionary who was paid by that old and historic

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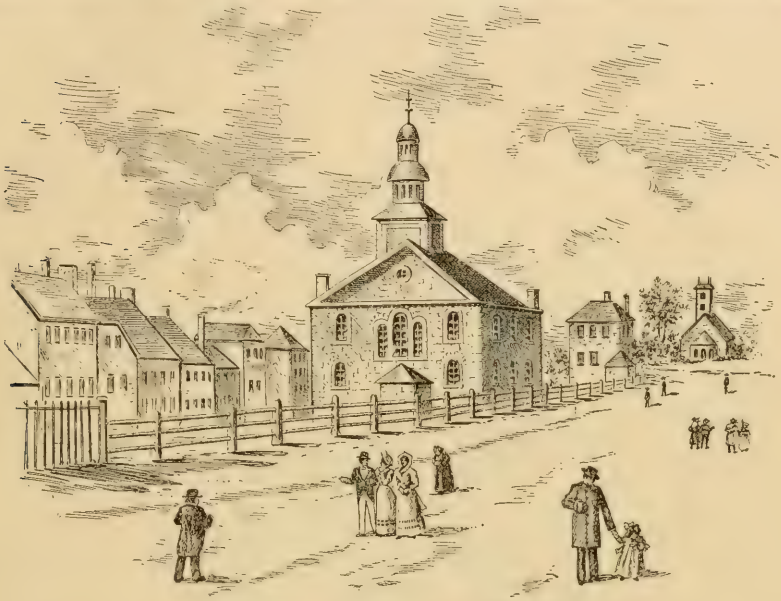
O'Brien, who is always ready to aid his fellow students in history and literature: "The Vicariate of Nova Scotia was erected into a diocese and called the See of Halifax in January, 1842 Bishop Fraser, previous vicar apostolic, was appointed its first bishop, and Dr. Walsh his coadjutor. I have not at hand the official document, or Bull of erection, but proofs of the fact abound. (1.) I have letters of Bishop Fraser's up to November 20, 1841, and he always signs Bishop of Tanen. The first of his which I have in 1842 is dated 20th October, and he signs Bishop of Halifax. (2,) Bishop Walsh in a brief memorandum of events in his life says: 'Coadjutor-Bishop of Halifax *cum jure successionis*, January, 1842.' Shortly after his arrival in Halifax, viz., on 4th November, 1842, he officially signs 'Coadjutor of Halifax' to documents and letters. Later on he speaks of, and addresses Dr. Fraser as 'Bishop of Halifax.' There are other proofs, but these suffice. Both Bishop Fraser and Bishop Walsh knew their correct titles. Their letters establish the erection of the Diocese of Halifax in 1842. In Sept., 1844, the diocese was divided, and Bishop Fraser transferred to the new See of Arichat. For a few months Dr. Walsh was 'Apostolic Administrator' of the diocese of Halifax, and then became its second bishop."

institution so intimately associated with the establishment of the church in all the colonies of the British crown. The first missionaries, sent out in 1749 and the following years, were Reverend Messrs. Anwell, Moreau, Tutty, and Breynton. St. Paul's Church—the oldest Protestant church in the Dominion—was commenced in 1750 on its present site, with materials brought from New England, and was opened for service in an

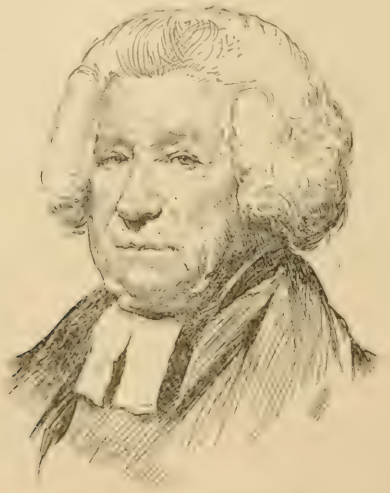


OLD SAINT PAUL'S CHURCH IN 1800 AND LATER.

incomplete state on the 2nd September, 1750, by the Reverend Mr. Tutty, who died in 1754, and was succeeded by the Reverend Mr. Breynton. The present St. Paul's[1] has had additions made in the course of a hundred

[1] St. Paul's church contains more mural tablets and escutcheons than even the Anglican Cathedral at Quebec. Governor Lawrence was first buried in its vaults and his escutcheon has been placed on its walls. Other eminent men buried here are the following :. Baron de Seitz, Baron Kniphausen, both Hessian officers ; Lord Charles Greville Montagu, another distinguished military man ; Vice-Admiral John Parr, a governor of Nova Scotia, at the time of the coming of the Loyalists, in honour of whom St. John, N. B., was first called Parrtown ; Sir John Wentworth, Bart., the Loyalist governor of Nova Scotia, formerly of New Hampshire ; Chief Justices Jonathan Belcher, Bryan Finucane, Sir Brenton H. Halliburton ; Right Reverend Charles Inglis, first bishop, and a number of other distinguished persons identified with the early history of Nova Scotia. Among the mural tablets are those of the first bishop, Charles Inglis, and of his son, John Inglis, third bishop ; Sir John Wentworth, named above ; Captain Evans of H. M. ship Charlestown, killed in action 1781 ; Lord Montagu, mentioned above ; Sir John Harvey, a lieutenant-governor of Nova Scotia, the hero of Stoney Creek in the war of 1812-14 ; Chief Justices Blowers and Halliburton ; Mr. Justice Uniacke, to whom I refer on page 40 ; Brigadier General McLean ; Hon. M. W. B. Almon ; Mr. Justice Norman F. Uniacke of the Superior Court of Lower Canada ; Mr. Justice J. W. Ritchie of the Supreme Court of Nova Scotia (see *infra*, page 73) ; Archdeacon Willis, long a

and fifty years but its main framework is the same as in the middle of last century. Old St. George's, the next oldest historic church, always kept in repair since 1760, is to be seen on Brunswick street at the corner of Gerrish, so named from one of the early settlers. It is now always called the "Little Dutch Church" because it was built for German converts soon after the completion of St. Paul's. A church first called "Mather's" in honour of the famous Cotton Mather, of New England, was built in 1760 on Hollis street, for the Congregationalists, many of whom came from New England, and the Reverend Mr. Cleveland, great-great-grandfather of a president of the United States, was the first minister. It became, subsequently, the property of the Church of Scotland, and was called St. Matthew's. It was burnt down in 1859, and its congregation moved their church to Pleasant street, at the foot of



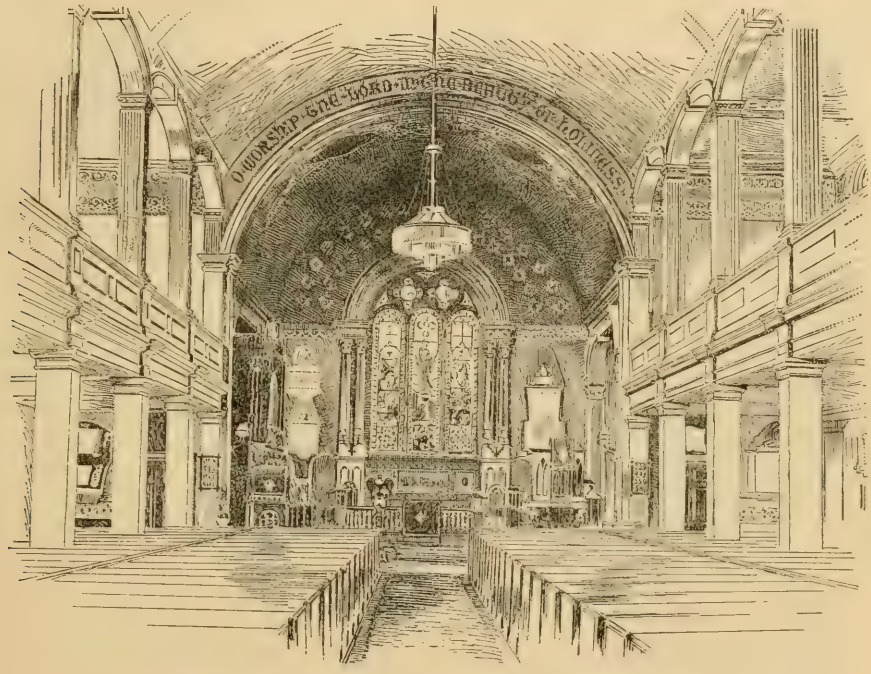
REVEREND DR. BREYNTON OF ST. PAUL'S.

Spring Garden road. The Reverend Mr. Moreau, a most accomplished man, was connected for years with the county of Lunenburgh, where he laboured assiduously among the German and French Swiss Protestants. Two other notable clergymen who laboured in the early times of Lunenburgh were the Reverend Messrs. Bryzelius and De la Roche.

Among Church of England missionaries from the foundation of Halifax until the Loyalists came in large numbers in 1783 to the lower provinces, we find the following names: The Reverend Messrs. Joseph

familiar figure in Halifax, and many representatives of old Halifax families. The massive silver services for the communion were presented by George II. See St. Paul's Parish "Year Book" (Halifax, N.S., 1899), kindly given me by the Reverend Mr. Armitage, rector, to whom I am also indebted for photographs of Dr. Breynton and others.

Bennett, Robert Vincent, William Ellis, Thomas Wood, John Eagleson, and John Wiswell, whose mission field extended over the districts of Lunenburgh, Hants, Kings, Annapolis and Cumberland, where the New England migration had brought a considerable population. Mr. Wood had been an assistant to Reverend Mr. Breynton of St. Paul's, and was noted for his knowledge of the Micmac language, to the study of which he had been directed by his acquaintance with Abbé Maillard. He wrote a grammar, and translated various religious services, which enabled him to be especially useful to the Indians, among whom he worked assiduously.



INTERIOR OF ST. PAUL'S, HALIFAX, AT PRESENT TIME.

The coming of the Loyalists gave a great impulse to the growth of the Church of England, as nearly all of the twenty-eight thousand people, who found their way to the maritime provinces, belonged to that faith. Over thirty clergymen sought refuge in these provinces, between 1776 and 1786, and the majority made their homes in the new colony of New Brunswick. A very few soon left for England, or returned to the United States, where the distinguished Mr. Seabury, of Connecticut, became the first Episcopalian bishop. The following gentlemen remained in Nova Scotia, and ministered to the religious necessities of the exiles whom they had accompanied: The Reverend Messrs. Jacob Bailey, Brudenell, Isaac

Brown, William Clarke, Bernard Michael Howseal, Nathaniel Fisher, John Hamilton Rowland, John Rutgers Marshall, George Panton, Roger Veits, William Walter—the first pastor at Shelburne—Joshua Wingate Weeks, Mather Byles and John Wiswell.

At Sydney, which was made the capital of Cape Breton in 1784, the first clergyman was the army chaplain, the Reverend Benjamin Lovell, but in 1786 the Reverend Ranna Cosset, who was of French extraction, and had officiated in New England, was appointed to the incumbency of St. George's Church, which still stands, though much changed in

OLD KING'S COLLEGE, WINDSOR, N.S.

appearance, on its old site, and has the honour of being the pioneer church of the English regime in the island.[1]

The Rev. Dr. Charles Inglis, who had been a leading divine for many years in New York, and forced to fly from the country when the revolution was successful, was consecrated at Lambeth on the 12th August, 1787, as the first bishop of Nova Scotia—and of the colonies in fact—with jurisdiction over the provinces of Upper and Lower Canada, New Brunswick, Prince Edward Island, Bermuda and Newfoundland,

[1] See an interesting article on "The Historic Anglican Church of Sydney", in the *Halifax Herald*, June 27, 1896, by Archdeacon Smith, D.D., rector of St. George's. The same paper has also published a series of valuable papers on "Historic Churches of Nova Scotia".

until the Right Reverend Jacob Mountain was consecrated in 1793 first Anglican bishop of Quebec. Bishop Inglis was a member of the executive council and exercised great influence in the government of the province. He was the founder of the University of King's, which had its beginning as an academy, in 1787, became a college in 1789, and received a royal charter in 1802. It received large imperial and provincial grants for many years, and was a power in the politics of the country, when a fierce controversy raged between the supporters and opponents of denominational colleges. Among the distinguished men who were educated within its walls in its palmy and prosperous days were Judge Haliburton ("Sam Slick"), Sir John Eardly Wilmot Inglis, of Lucknow fame, Chief Justice Cochran, of Gibraltar, Judge R. J Uniacke, Bishop John Inglis, Chief Justice Stuart, of Lower Canada, Reverend Dr. Crawley, Judge Wilkins, Martin J. Wilkins, Rev. Dr. McCawley (a president of the college), Judge Bliss, Sir Edward Cunard, Judge John Gray, Honourable J. Boyle Uniacke, Chief Justice Jarvis, of Prince Edward Island. Until the separation of the executive from the legislative council, and the foundation of a responsible system of government, the Church of England was practically dominant in official life. In an address of the assembly to the king in 1837, praying for an elective legislative council and other constitutional changes, it was set forth that the Church of England though only one-fifth of the population of the province, had nine members in the council, while the Presbyterians, who were more numerous, had only two members, and the Roman Catholics, who were about equal, had only one, and the other religious bodies none at all, on the board. The Episcopalian bishop had also a seat at the council, but the same privilege was not extended to the Roman Catholic episcopacy. The Church of England has made more progress since it is removed from the political animosities and religious jealousies which its position evoked in old times. At present, it comprises between sixty and seventy thousand people, and upwards of two hundred and ten churches, with one hundred and eight clergymen.[1]

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[1] For interesting particulars respecting the Church of England in Nova Scotia, see :—"The Church of England in Nova Scotia, and the Tory Clergy of the Revolution, by Rev. A. W. Eaton, B.A., New York, 1891." Mr. Eaton is a descendant of one of the New England settlers of 1760-1762. The successors of Bishop Charles Inglis were the Right Reverend Doctors R. Stanser (1816-24), John Inglis (1825-50), Hibbert Binney (1851-87), and Frederick Courtney, who still occupies the position. "Early History of the Parish of St. George's, Halifax," by Rev. Canon Partridge, in Collections of N.S. His. Soc., vols. VI. and VIII., 1887-8, 1891.

"A Sketch of the Rise and Progress of the Church of England in the B.N.A. Provinces. By T. Beamish Akins, Halifax, 1849, 12 mo."

"The University of King's College, Windsor, N.S., 1790-1890, by H. Y. Hind, M.A., New York, 1890."

III. Baptists.—The new settlers who came to Nova Scotia from New England between 1760-1763 were, for the most part Congregationalists, and by 1769 there were six churches of this denomination, at Barrington, Liverpool, Chester, Halifax, Cornwallis and Cumberland, each with a pastor; but in the course of time those people became Presbyterians or Baptists. The Rev. Mr. Alline, called the Whitfield of Nova Scotia, was a popular preacher between 1776 and 1784, who established several "new light" churches which eventually became, for the most part, Baptist. The same body gradually embraced a large portion of the most influential families of New England origin, and differences in the Church of England at Halifax added to their numbers. One of the early Baptist ministers was the father of the eminent Canadian statesman

REVEREND DR. CRAWLEY.

(See page 54n.)

Sir Charles Tupper. Acadia College, which was established as early as 1829, as an academy at Horton, owed much of its success to the ability and energy of the Reverend Drs. Pryor and Crawley, who with the Honourable Mr. Johnston, always a supporter of denominational colleges, were seceders from the Church of England. The most striking figure in the history of the Baptists of Nova Scotia is undoubtedly that of Dr. Crawley, a member of a family which had always held an honourable position among the gentry of England. His father was a commander in the Royal Navy, where, as a midshipman, he had served under Nelson. The captain settled in the island of Cape Breton, and the present writer well remembers his beautiful home across the harbour of Sydney, where the boyhood of Dr. Crawley was passed among the trees and flowers

which were cultivated and tended with such loving care by his father and mother, who brought with them their fine English tastes and habits. For more than sixty years, after he had left the Bar, for which he was educated, and joined the Baptist Church in 1827, he exerted a remarkable influence in its affairs, especially in connection with Acadia College, which he was proud to see established on a firm foundation long before his death. Originally connected with the Church of England, and educated in old King's, he formed an association with the Granville Street Baptist Church when it was established nearly three-quarters of a century ago, principally by individuals who had recently separated from the communion of the Church of England—notably the Honourable James W. Johnston, the Pryors and others of high standing in the social and political life of the province.[1] Up to that time the Baptists were, as a body, poor, illiterate and unimportant in every sense, from a worldly point of view. The ministry were ignorant and even antagonistic to regular theological or liberal training. The conversion of such men as Dr. Crawley, with superior intellectual powers and learned attainments, brought about a remarkable change in the mental development and numerical growth of the Baptist Church in the Maritime Provinces, where it still occupies a position much in advance of that held by the same body in other parts of the Dominion. Dr. Crawley was in every sense a gentleman, not simply by artificial training, but by natural instincts inherited from a fine strain of blood. He was dignified and urbane, full of benevolent sympathy for young and old, and the language in which he clothed the elevated

[1] See "Origin and formation of the Baptist Church in Granville Street, Halifax, N.S., constituted on the 30th September, 1827, in which some notice is taken of the influence of Evangelical truth and of the motives which induced a recent separation from the Church of England. Halifax: Printed at the Nova Scotian Office, 1828." 8vo. See also in this connection a series of interesting articles on the "History of St. Paul's Church," by the Reverend G. W. Hill, D.C.L., in the Collections of the N. S. Hist. Soc., for 1878, 1879-80, 1882-83, vols. I, II, III. Dr. Hill gives copies of the original documents showing the nature of the serious dispute, which commenced in 1824 and ended eventually in the secession of a number of influential people from the Church of England. The difficulty originated with the appointment by the Imperial Government of the Reverend Robert Willis, afterwards Archdeacon, to the rectorship of St. Paul's on the elevation of Dr. Inglis to the Episcopal See vacant by the death of Bishop Stanser. The members of the congregation were generally in favour of the appointment of the Reverend John Thomas Twining, who had been for nearly eight years assistant to Dr. Inglis, and strenuously resisted the contention—undoubtedly right in law—that it was the prerogative of the Crown to choose a successor to the rectorship of the parish. Dr. Willis was "inducted" in due course, as the Crown refused to give up its right, and the Society for the Propagation of the Gospel, which contributed to the support of the church, also selected the new rector as its missionary. The schism was too deep to be bridged over by any conciliatory counsels, and such men as the Honourable James W. Johnston, who had very democratic ideas as to the control of parochial affairs, ere long joined the Baptists and gave them new vigour. I remember perfectly well the Venerable Archdeacon Willis who remained in charge of the parish for forty years, and won, as Dr. Hill, his successor, very truly says, "by his conciliatory spirit and benevolent course of life the good-will of the people."

thoughts to which he gave utterance in the pulpit or on the public platform were chaste, clear and impressive. Even to his ninetieth year, when he closed a long, brilliant and useful career, his face retained that intellectual, refined cast which in his youth was a positive beauty.[1] The Baptists of Nova Scotia now number over seventy-three thousand persons, and are consequently the third largest denomination, and occupy three hundred and forty churches, with one hundred and nineteen ministers. The "Free Will" Baptists also number upwards of twelve thousand members.

REVEREND WILLIAM BLACK

From Reverend Dr. Richey's Memoirs.

IV. Methodists.—The pioneer of the Methodist church of Nova Scotia, and indeed of the maritime provinces, was the Reverend William Black,[2] who preached for half a century but made his first success at Sackville in New Brunswick, where in the course of years, was established

[1] For an eloquent and judicious estimate of Dr. Crawley's life, see "The Crawley Memorial Address" (Halifax, N.S., 1889), by Judge J. W. Johnston, D.C.L.,—a son of the old Conservative chief and Judge in Equity,—delivered on June 4, 1889, at Acadia College, Wolfville. The portrait I give represents him in the winter of his days, and has been kindly lent me by Mrs. A. W. Savary, of Annapolis Royal.

[2] See "Memoir of the late Rev. W. Black, Wesleyan Minister"; by M. Richey, A.M., Halifax, N.S., 1839.

the prosperous university which owes its name of Allison to the liberal gentleman whose liberality gave it birth. So slow, however, was the progress of this church that by 1800 it only had five ministers in all Nova Scotia, while at the present time the Conference comprises one hundred and thirty-four members, who minister in two hundred and eighty churches, to between fifty and sixty thousand persons. In 1786, Mr. Black made Halifax his base of operations for work from time to time among the societies which he established in various parts of the province. Mr. Wesley corresponded with him and encouraged him in his pioneer labours in a field untrodden until he took it up. He was

REVEREND DR. MATTHEW RICHEY.

undoubtedly one of the most successful missionary ministers of the province, when we consider the progress Methodism made through his untiring energy. Dr. Alder, who became one of the secretaries of the Wesleyan Missionary Society in the parent state, was also a useful worker for his church in its formative period.[1] One of the most eloquent ministers of this church, who obtained a reputation beyond the province, was the Reverend Dr. Matthew Richey, whose son became, in 1883, a lieutenant-governor of Nova Scotia in succession to Sir Adams Archibald. Dr. Richey was for a while president of Victoria College, and also president of the

[1] See "Memorials of Missionary Life in Nova Scotia" by Charles Churchill, Wesleyan Missionary, London, 1845. Also "History of Methodist Church, including Nova Scotia, New Brunswick, Prince Edward Island and Bermuda," by Rev. Dr. T. Watson Smith, who has recently issued an interesting essay on Slavery in Canada in Collections of Nova Scotia Hist. Soc., vol. X.

Canadian, as well as of the Eastern British American Wesleyan Methodist Conference.[1] He possessed a degree of scholarship which was more exceptional in those days among the ministers of his church than it is at the present time when the necessity of university training is generally recognized.

V. Presbyterians.—The Presbyterians of Nova Scotia now number upwards of one hundred and ten thousand persons and consequently rank second among religious denominations—the Roman Catholics coming first. They own over two hundred and sixty churches, and enjoy the services of a hundred and twenty-four ministers. The first Presbyterian ministers in Nova Scotia were the Huguenot missionaries who accompanied De Monts in 1604 to St. Croix and Port Royal, but this experiment did not succeed and we hear no more of Calvinist efforts until Halifax was founded. In a previous paragraph I have referred to the establishment of old St. Matthew's and to the growth of Presbyterianism among the New England people, who gradually withdrew from the Congregational forms peculiar to the old colonies. When St. Matthew's became the property of the Church of Scotland the following clergymen officiated within its walls for half a century: Reverend Messrs. Russell, Brown, Gray, Knox, Renny, and Scott. The first presbytery of the Church of Scotland was formed in 1833 by an act of the legislature. As early as 1769 there was built in Lunenburg a German Presbyterian or "Dutch Calvinistic" church. Its minister in 1770 was the Reverend Bruin Romas Comingo, a native of Holland, who was the first Presbyterian ordained in Nova Scotia. When a schism took place during 1733 in the old Presbyterian church of Scotland, the Secession Church turned its attention to Nova Scotia. The Reverend Mr. Kinloch was the first Presbyterian missionary to Nova Scotia in 1766, but he returned to Scotland in 1769. In 1785 and 1786 we hear of Reverend Messrs. Daniel Cock, David Smith, James Murdoch, George Gilmore and Hugh Graham, regularly settled at Truro, Londonderry, Horton, Windsor and Cornwallis respectively. The Reverend James Murdoch, who was ordained by the Presbytery of Newton Limavady "for the Province of Nova Scotia or any other part of the continent where God in his Providence, may call him," was among the notable pioneers of the Presbyterian Church during the last thirty-three years of the eighteenth century. For twenty years he ministered to the religious necessities of the people at Horton, Windsor, Cornwallis, Parrsboro, Amherst and other places. He was not supported by any missionary society, but depended entirely on free-will offerings. One of his descendants was Beamish Murdoch, the historian and annalist, and the well-known families

[1] See an excellent though short sketch of Dr. Richey's life by Fennings Taylor in "Portraits of British Americans" (Montreal, 1865), illustrated by Notman. The portrait I give is taken from this book.

of Cunard, Morrow, Henry, Ritchie and Sangster, are connected with him through his daughters.[1]

The most prominent clergymen long identified with the early development of Presbyterianism, were the Reverend Drs. MacGregor and MacCulloch of Pictou. The Secession Church arose in 1733 out of the hostility of a few conscientious ministers of the established Church of Scotland to the corrupting influences of a system of patronage which facilitated the growth of a time-serving and ignorant ministry, and also in the course of time divided into what were known as Burghers and Antiburghers. These differences of opinion actually anticipated that momentous controversy which agitated the Church of Scotland many years later with regard to the freedom of the church from all dependence on the civil power. The origin of these names is explained by Dr. Patter-

REVEREND DR. MACCULLOCH.

son in his life of Dr. MacGregor, of whom he was a grandson. It appears that the burgesses of Edinburgh, Glasgow and Perth were required by the law to take an oath, in which there was this religious clause: "Here I protest before God and your Lordships, that I profess and allow with my heart the true religion presently professed within this realm, and authorized by the laws thereof; I shall abide thereat and defend the same to my life's end, renouncing the Roman religion called Papistry." Dr. Patterson explains that this clause was held by some ministers and elders "as implying an approval of the corruptions of the Church of Scotland against which the Secession was testifying, and they therefore refused to take the oath; but others held that it only meant the true religion itself in opposition to that of the

[1] See a short paper on Reverend James Murdoch in the Collections of the N. S. Hist. Soc., vol. II.

Roman Catholics, and therefore were willing to take the oath, or at least, regarded the point as one on which conscientious men might honestly differ, and which therefore might properly be made a matter of forbearance." Those who condemned the taking of the oath were usually known as Antiburghers, while those who did not object to its terms were called Burghers. Dr. MacGregor and other ministers who formed the presbytery of Pictou, were representatives of the Antiburghers, and the presbytery of Truro consisted of ministers sent out by the Burghers Synod of Scotland. Dr. Patterson, whose memoirs of his grandfather are especially interesting on account of the record they give of the difficulties and privations of the pioneers of the churches in Nova Scotia, tells us that Dr. MacGregor on his first coming to the colony refused to unite with the Presbyterian ministers, but at the same time carried out the instructions of the Antiburghers Synod that he was not to make seceders, and eventually took a prominent part in uniting the different presbyteries of the Secession Church on the basis of their common presbyterianism—the forerunner of the larger union which in recent times has united all branches of the Presbyterian church in Canada.

The name of Dr. MacCulloch, who came to eastern Nova Scotia in 1803, is intimately associated with the history of Pictou Academy,[1] of which he was the founder. It never realized his orginal broad conception in consequence of the opposition it met from the friends of King's in the legislative and executive council. Indeed the early trials of this institution more or less affected the politics of the country. The supporters of the academy represented the spirit of liberal free education in opposition to the too selfish sectarianism of King's. Indeed had there been more liberality of thought and idea in the early days of old King's, it might now be the most prosperous university in the provinces, instead of being an institution more interesting from an historical point of view than conspicuous for its success in these modern times. The narrow spirit that confined it from the very outset practically to the Church of England also gave it a rival eventually in Dalhousie College, which was founded by Lord Dalhousie when governor of the province with the avowed object of affording the advantages of higher education to the

[1] Pictou Academy has given many distinguished men to law and politics. Among others, Dr. Patterson in his History of Pictou, p. 359, mentions Sir T. D. Archibald, of the English Court of Exchequer; Sir William J. Ritchie, chief justice of New Brunswick, and later chief justice of the Supreme Court of Canada; Sir Hugh Hoyles, chief justice of Newfoundland; Sir Adams G. Archibald, K.C.M.G., lieutenant-governor of Manitoba and Nova Scotia; Judge Young, of Prince Edward Island; George R. Young, M.P.P., politician and journalist; Sir W. J. Dawson, F.R.S., so long identified with McGill College. On the same authority we learn that largely owing to the influence of the same institution in its early days, "the county has ever since given a larger proportion of the best of her sons to the ministry than any population of the same size in the Dominion." Dr. Patterson gives a list in an appendix to his history.

youth of all denominations. "It is particularly intended" said Lord Dalhousie, in laying the foundation stone in May, 1820, "for those excluded from Windsor. Its doors will be open to all who profess the Christian religion." At a much later time King's had even an opportunity to unite with Dalhousie but its too conservative supporters would not avail themselves of the occasion offered them of giving vitality to their ancient institution, around whose time-worn walls the tide of progress surges in vain. While Dalhousie still shows evidences of Presbyterian influences in its staff, yet it is non-sectarian in its teachings and is doing a useful work in the promotion of higher education.[1] Acadia, which also had its origin in the old times of bitter antagonism to King's and the church which governed it, is also a prosperous institution from which have graduated not a few men who have made their impress on the intellectual thought of the world. Among those who have won a reputation beyond the province are President Schurman of Cornell University; Dr. Wallace, chancellor of McMaster University; Dr. Welton, professor of Oriental languages in the same institution; Dr. Corey, president of the Theological College at Richmond, Virginia; Dr. T. H. Rand, ex-chancellor of McMaster University, poet and scholar, who was superintendent of education in Nova Scotia as well as New Brunswick; Dr. Silas McVane, an accomplished professor of history and economics in Harvard University; Dr. C. T. Hart, president of the Geological Survey of Brazil; Dr. B. Rand, an assistant professor of economics in Harvard University. Judges Graham and Weatherbe, of the supreme court of Nova Scotia; Judge McLeod, of the supreme court of Prince Edward Island; Judge Johnston, of the Halifax county court, eldest son of Hon. J. W. Johnston, and the versatile attorney-general of the province, Hon. J. W. Longley, F.R.S.C., were also educated in the same progressive institution.

Presbyterian missionaries appear to have been laggard in coming to the island of Cape Breton after the Scotch migration in the first quarter of the nineteenth century. For some years the island was visited at distant intervals by Dr. MacGregor and other clergymen in Eastern Nova Scotia, and it was not until after 1830 that the Reverend Mr. Farquaharson was specially sent out by the generosity of a rich lady in Scotland. In a few years, there were labouring in the different places, the following ministers: Reverend Mr. Stewart, at St. George's Channel; Reverend Mr. Wilson, at Sydney Mines; Reverend Mr. McLean, at Whycocomagh; Reverend Mr. Miller, at Mabou; Reverend John Gunn, at Broad Cove;

[1] See "Memoirs of James MacGregor, D.D., by Rev. George Patterson, D.D., Philadelphia and Halifax. 8vo, 1859." No portrait of Dr. MacGregor is in existence.

"A history of the County of Pictou" by the same, Montreal, 8vo, 1877.

"History of the Mission of the Secession Church to Nova Scotia and Prince Edward Island from its commencement in 1765, by Rev. J. Robertson, 12mo, Edinburgh, 1847."

Reverend Norman McLeod, at St. Ann's; Reverend Mr. Ferguson, at Sydney: all of whom may be justly considered the pioneers in the mission field of the Presbyterians of Cape Breton.[1]

VI. Lutherans, etc.—Conclusion.—Many of the Germans, who came into the province in 1749 and later years, were Lutherans, and their first church in Lunenburg was formally opened as early as 1771. The clergyman who first preached within its walls was the Rev. Mr. Muhlenberg. The names of the ministers most identified with the early development of the Lutheran Church were Messrs. Frederick Schultz, Johann Gottlob Schmeisser, Ferdinand Conrad Temme, and Charles Ernst Cossmann. The total number of Lutherans in the province at the last census was less than six thousand, of whom five thousand five hundred members lived in the county of Lunenburg.[2] The conference of the Evangelical Lutheran Church of Nova Scotia comprises only five ministers, all of whom are connected with the churches of the historic German county. The Congregationalists now number less than four thousand persons, while the Disciples, Adventists and Quakers respectively comprise less than two thousand, and do not require any special mention in these pages.

The trials, sufferings and devotion of the missionaries of the several churches of the province form materials for a most interesting history from the time when the Roman Catholic priests and Calvinist ministers arrived in the province with Sieur de Monts down to the fourth decade of the present century, when the province had attained a condition which rendered the labours of the clergy relatively easy. Most of the histories that have been printed of the labours of the pioneer clergy have so far failed to do full justice to the men who performed such an invaluable work for the social and moral development of the people.[3] All that I attempt, or am able to do in this short imperfect review is to recall the names of some of the worthy pioneers of the principal churches, and express the hope that a competent pen will ere long take up the subject and record the heroism, pathos, and self-sacrifice which illustrate the lives of the religious builders of Nova Scotia.

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[1] See "A brief sketch of the Cape Breton Mission, with a notice of the late Mrs. Mackay, of Rockfield, who was the main instrument in establishing the mission, and by whom its affairs were almost solely conducted. For private circulation, (Edinburgh) 1851."

I have had also the advantage of the perusal of the MSS. of a lecture delivered by Mrs. Edith J. Archibald, on the "Early Scotch Settlers in Cape Breton." before the N. S. Historical Society, in February, 1898.

[2] See DesBrisay's Lunenburg for interesting details of the different religious bodies in that historic section.

[3] The Relations of the Jesuit Fathers, Patterson's "MacGregor," Richey's "Black," cited in these pages, and some of the reports of the missionaries sent out by the Society for the Propagation of the Gospel, form an exception to the remark in the text above.

III.

Reminiscences of Eminent Nova Scotians for Forty Years.

I. Racial Elements of the Nova Scotian People.—The short historical review which I have given in the first part of this monograph shows that the people of Nova Scotia can claim a most honourable ancestry—that many important racial elements have entered into their composition in the course of two centuries and longer. French Catholics and Huguenots, Puritans and Cavaliers of the days of the Stuarts, German Lutherans from the old kingdom of Hanover, Protestants from Montbéliard between the Rhine and the Rhone, Scots from the Highlands, the Hebrides and the Lowlands, Scotch-Irish Presbyterians from the north and Catholic Celts from the south of Ireland, Englishmen from the hop gardens of Kent and the meadows of Devon, from all parts of the ancient kingdoms where Celt, Saxon and Norman have blended in the course of centuries—all these have contributed to form the people who have made the Acadian peninsula and the island of Cape Breton such prosperous and influential sections of the Dominion. I have shown that each class has contributed its quota of men who have made the name of Nova Scotia so well known in many lands. The dark stone floors of the gloomy corridors of the old legislative building in Halifax have echoed to the tread of many men, statesmen, jurists, journalists, historians and poets, associated with the most interesting epochs of provincial history. Those legislative halls seem to one like myself full of the voices of men who proved the energy, the eloquence, the vitality of their national origin. To me those corridors and halls are familiar ground—associated with memories of my early manhood. When I visit the old town of Sydney, where I was born, or walk the streets of the old city of Halifax where I was a journalist from 1859 till 1867, I begin to recognize the fact that I am growing old and becoming a man of reminiscences. As I look at the faces I meet, or enter the legislative chambers of the province building, it is chiefly memories now that come to greet me.

> "Let me review the scene,
> And summon from the shadowy past
> The forms that once have been."

II. Memories of Some Men of the Old Times.—The years of which I am about to speak—1858-1867—were the close of the "old times," and the beginning of a new era in the history of Nova Scotia. The "old times" had been noted for the presence of eloquent, witty, versatile, accomplished men, but by 1859 their ranks had been severely thinned, some by the course of nature, and others, unhappily, by the excess of social pleasures, which, as in the days of Fox and Pitt, were no social crime in Halifax. To drink deep potations and disappear regularly under the table, was then no dishonourable or unpopular feat. I can still well remember the evil consequences to Halifax and other towns in Nova Scotia of the mad enjoyment of drink. Assuredly life in Nova Scotia and other parts of Canada has in this respect vastly improved for the better, and no one can now taunt public men with excess as in old times.

It was in 1859 that I first took my seat at the official reporters' desk and saw many men who have been most closely identified with the political history of the province. for the second half of this century. James Boyle Uniacke, Lawrence Doyle, Herbert Huntington, and other men of the generations who had taken part in the struggle for responsible government, had passed away, although as a boy I had seen and heard some of them. I can well remember hearing James Boyle Uniacke address a jury in the old court house at Sydney—long since levelled to the ground—where the old judge—the famous author of "Sam Slick" was presiding—one of his last appearances on the bench where an innate sense of humour often got the better of the judicial dignity. I can still hear the sonorous voice of the eminent lawyer when he drew himself up in his most stately fashion, and, as it were, embraced with voice and gesture "this sea-girt isle"—a phrase which local parliamentarians would hardly now use with the same effectiveness in the relatively placid, dull debating hall of the assembly where speeches are no longer delivered with the *ore rotundo* that was so successful in the old times of Uniacke, Lewis Wilkins and their contemporaries.

As I have already said, I was only a boy when I first saw Judge Haliburton, who soon afterwards removed to England from the province where he had been for so many years a conspicuous figure, and consequently I have nothing to say of his personal characteristics from my own knowledge. I can well remember, however, the complex feelings with which his name was once mentioned by many Nova Scotians who were proud of his reputation as an author, and at the same time inclined somewhat to resent his sarcastic allusions to foibles and weaknesses of the Nova Scotian people. "It's a most curious unaccountable thing, but it's a fact, said the clockmaker, the blue-noses are so conceited, they think they know everything. . . They reckon themselves here, a chalk above us Yankees, but I guess they have a wrinkle or two to grow afore they progress ahead on us yet. If they ha'nt got a full cargo of conceit here,

JUDGE HALIBURTON.

then I never see'd a load' that's all. They have the hold chock full, deck piled up to the pump handles, and scuppers under water."

In these times, when all of us can afford to be less touchy than the generation among whom the humourist lived, we cannot fail to be amused at his references to the self-satisfaction which was and is a conspicuous trait of our fellow-countrymen and to the want of "go-aheaditiveness" which was too prevalent among a people whose relations with the restless world of progress beyond them were relatively insignificant. Even in these days Nova Scotians, who mix little with communities beyond their provincial limits, carry about them an air of superiority and a shade of disappointment that there are so many people who have not had the advantage of being born and bred in the land of the mayflower. Such traits were notably prevalent in the old times when Nova Scotia had a distinct colonial government, and Haliburton could not resist the temptation to hit off the self-conceit of a large class in his inimitable book "The Clockmaker," and at the same time the brag "of the most free and enlightened citizens on the face of the airth," whom Sam Slick was always representing "as takin' the shine off all creation." Sam Slick remains still one of the few original creations of American humour, and new editions continue to be printed from time to time. All his other books are readable and full of "spicy" observations, which show his keen knowledge of human nature, but they are little read now-a-days and his reputation must always rest on the sayings and doings of Sam Slick. His history of Nova Scotia in two octavo volumes is distinguished by that lucidity of narrative which was one of his merits as a writer, but it is no longer an authority in view of the new light thrown upon the various epochs of our annals by the copying and publication of important archives with which he was entirely unacquainted. In his first volume he is open to a charge of plagiarism, since the narrative of the events of the seven years war, and especially the account of the second siege of Louisbourg are either condensed, or taken *verbatim et literatim*, from the English history by Smollet. The second volume is largely made up of contributions from residents of the counties and townships, of which he gives interesting geographical and topographical descriptions. For instance, the very full account of the island of Cape Breton was written by Mr. W. H. Crawley, who was connected with the surveys of that island, and is much above the average merit of the volume from a literary as well as economic point of view. I do not, however, mention these facts with any desire to detract from the undoubted merit of a history which at the time it was published—seventy years ago—was the first attempt of importance made by a Nova Scotian to give to the world of letters a history of the province, and at the same time, describe its interesting scenery and valuable resources then relatively little known to the great world of commerce and enter-

prise. Even now, it is more interesting and readable than Beamish Murdoch's valuable summary of provincial archives and rare books, or the latest history written in 1892 by a Mr. Duncan Campbell, a Scotchman by birth and education, who had been only a few years in the country when he ventured to write a history which has never risen beyond the level of ordinary contributions to newspapers.

The Judge's books should assuredly find a place on the shelves of every public library in the Dominion[1]. One of his sons has been recently elevated to the peerage of England on account of his usefulness as a member of the staff of the war office, but he does not appear to have made any venture into the world of literature where his father has made a permanent name. Another son, who in his early manhood had some literary aspirations, has disappeared from public view—perhaps lost in those mysterious Pleiades where he passed in imagination so many of his brightest years, in an endeavour to connect "the sweet influence" of those seven stars with the holding of "festivals of the dead"—All Halloween, All Saints, All Souls, etc.—among many peoples from immemorial times. To prove the unity of the origin of the human race by the universality of certain superstitions, he did not consider the human, and very comforting act of sneezing beneath elaborate comment in learned treatises which, though necessarily confined to a very limited class of readers, showed much evidence of thought and learning which, profitably and perseveringly directed, might have enabled him to realize the promise of his youth.

In connection with these brief references to the literary labours of Judge Haliburton, mention may be made of an interesting fact, not generally known, which is one example of many that might be adduced to show that the historian and humourist was always alive to the material interests of his province. Indeed the second volume of his history, and the frequent references in his humorous books to the stagnant industries and the absence of a spirit of enterprise in his native provinces, show that he had a very practical side to his character. The fact to which I allude is the part he took in initiating steam navigation across the Atlantic in connection with Mr. Howe, of whom he was always a warm friend, though their views on political questions as the years passed by were not

[1] For a correct bibliography of the Judge's writings see one by J. Parker Anderson of the British Museum in "Haliburton, a centenary chaplet, printed for the Haliburton Club, King's College, Windsor, N.S., at Toronto, 1897."

A complete set of the first editions of the Judge's books are now difficult to purchase in London, where they were all published, and is worth about sixty dollars at the very least. His history is frequently offered in catalogues of old books from five to eight dollars, according to its condition. It contains a map and several illustrations, one of which, the province building, is given on page 74 of this book.

An excellent criticism of "Haliburton: the man and the writer" has been written by F. Blake Crofton (King's College, Windsor, Haliburton series, 1889).

always identical; for the old judge eventually, as some of his later books show, developed a vein of Tory cynicism. In 1838 he and Mr. Howe went to England in the English ten gun brig "Tyrian," and on the passage were overtaken—and here I give Mr. Howe's own account as it appears in his "Speeches and Letters"[1]—by the steamship "Sirius," which was making its trial trip, in defiance of the opinion of Doctor Lasdner, the popular scientist of those days. The captain of the "Tyrian" decided to send his mails by the steamer, and when this was accomplished, the "Sirius" steamed off out of sight while the "Tyrian" was left to roll with flapping sails in a dead-calm. "Such a practical illustration of the contrast between the two motive powers," says the writer of the volume before me "was not likely to be lost upon such men as those who were left behind. On landing, Judges Haliburton and Mr.

SIR SAMUEL CUNARD, BART.

Howe went down to Bristol to confer with the owners of the 'Sirius' and 'Great Western.' In London they discussed the subject with other colonists, and, aided by Henry Bliss and William Crane of New Brunswick, endeavoured to combine all the North American interests in an effort to induce Her Majesty's government to offer such a bounty as would secure to these provinces the advantages of ocean navigation." An able letter was at once addressed by Mr. Howe to Lord Glenelg, then secretary of state for the colonies, urging the imperial importance of continuous steam navigation between England and her dependencies, and the result of this energetic discussion of the question was the announcement a few months later that contracts for the conveyance of mails by steam were awarded to Mr. Samuel Cunard, a Nova Scotian, who won

[1] See vol. I.; p. 180.

both fame and fortune. "All honour to the Nova Scotian who has carried forward this great work with such signal success. But those gentlemen[1] ought not to be forgotten who, at this early period, first turned the attention of British statesmen to a subject of so much importance."

Mr. Lawrence Doyle was born in Nova Scotia of Irish parents and educated at Stoneyhurst, where he acquired a very thorough knowledge of the classics for which he showed a special aptitude. His legal learning —undoubtedly considerable—his natural eloquence—never surpassed by any of his compeers—his thorough insight into any subject which he

HON. L. O'CONNOR DOYLE.

studied, well fitted him to win a high place at the bar as well as in the legislature of the province, but his tendency to wit, his geniality of manner, his love of society, led him to form habits which gradually lost him the confidence of his countrymen. Many people still remember the stories their grandfathers and fathers have told them of his ready humour and repartee, and do not know that he was in the early part of

[1] The most enthusiastic of these was Major Robert Carmichael Smith, who did much in his life-time in directing public attention to the importance of railroad communication between old Canada and the eastern provinces. The late Judge Fairbanks, long an important figure in Nova Scotia, was also one of the passengers, and an earnest advocate of the necessity of the steam navigation of the Atlantic. (See note, p. 180, to Howe's "Speeches and Letters.") The name of Fairbanks, I may add, is that of a family also long connected with the commercial interests of the colony.

his legislative career an industrious and useful representative. Among the measures he carried was one for the reduction of the term of the assembly from seven to four years—a practical extension of the control of the people over their representatives. "Have you heard," said one of his friends on one occasion—to relate one of many anecdotes of his wit—"that Street, the tailor, has been found in a well on Argyle street?" "Yes," replied the wit, "but you have not heard how he was discovered. An old woman, it seems, while drinking her tea was taken with a violent stitch in her side, and called out that there must be a tailor in the well!" Judge Savary, of Annapolis, also tells a story of Doyle's ready wit at a public dinner in Halifax many years ago, when public and social life

HON. HERBERT HUNTINGTON.[1]

was more brilliant than it has been ever since. The late Thomas Kenny, a brother of Sir Edward, happened to drink a glass of champagne somewhat hastily, and was nearly choked by a bit of cork that had escaped into the glass. The chairman called out, "Anything wrong at your end of the table, Mr. Vice?" Honourable James Boyle Uniacke, the vice-chairman, replied, "Oh, nothing serious, only a little champagne gone the wrong way to Cork!" Whereupon Doyle exclaimed, "but it has gone the right way to kill Kenny (Kilkenny)!" In striking contrast to the versatile, eloquent, witty *bon convive*, "Larry Doyle," as he was always called, was Herbert Huntington, of Yarmouth, whose physical proportions, courageous character, were typical of the

[1] The portrait of Mr. Herbert Huntington is from an original in the possession of his son at Yarmouth, N.S., and has been kindly given me by Mr. Flint, M.P.

Cromwells from whom he was descended—whose sound sense, love of freedom, adherence to principle, and solidity of argument were characteristic of men of the Hampden school of parliamentary debate. Under ordinary conditions he was a pleasant companion, but at other times when his mind was overburdened or ill-health oppressed him, he became, according to his friends, "as moody and irascible as Oliver himself."[1] No man in the legislature evoked more interest or confidence. Mr. Howe, of whom he was always a personal friend, found him his most useful and even powerful ally in the stern fight for liberal government. Like S. G. W. Archibald, and Howe himself, as well as many other able public men of those days, Huntington was self-taught, but no one had a larger store of general knowledge or better understood the social and political conditions of the people.

A notable figure in Halifax when I first made the acquaintance of Nova Scotians, eminent in law, politics and divinity, was the venerable Chief Justice who had sat on the provincial bench for the remarkably long term of fifty-three years, during twenty-seven of which he had been chief judge. He was the son of a loyalist, Dr. Halliburton, who came from Rhode Island to Halifax in 1782, and succeeded Chief Justice Blowers, also a distinguished loyalist, who had sat on the bench for thirty-five years. Sir Brenton received the honour of knighthood in 1859, and was probably the first acting judge of the province to obtain this royal recognition.[2] He was deeply versed in the principles of English law and equity and in his prime was noted for his acute analytical power. He was dignified and urbane in deportment and gifted with a facile pen. He was a strong advocate of imperial unity and wrote an able pamphlet

[1] See note to Howe's "Speeches and Public Letters," vol. I., p. 209.

[2] Chief Justice Strange (1791-1796) was knighted in 1797, but he went to England in 1796 and appears to have resigned his seat on the Nova Scotia bench before he received the honour and was appointed recorder in Bombay. If this be so, Chief Justice Halliburton was the first Nova Scotian judge who was made a knight. A number of native Nova Scotians have been enrolled among the Knights Bachelor, or placed on the list of the orders of merit like the Bath, and St. Michael and St. George, which take precedence of the former. Admiral Belcher, a grandson of the first chief justice, was a K.C.B. Admiral Provo Wallis, who took command of the "Shannon" when Captain Broke was disabled in the famous fight with the "Chesapeake," was made a G.C.B. Sir William Robert Wolseley Winniett, son of Sheriff Winniett, of Annapolis—the oldest family of English origin resident in Nova Scotia—and a governor of British colonies in Africa, was a Knight Bachelor. Governor Darling of Victoria, also born in Annapolis, was a K.C.B. Chief Justice Cochrane of Gibraltar was a Knight Bachelor. Sir Samuel Cunard was a baronet, and his grandson, Sir Bache, now bears the title and lives in England. Sir Edward Kenny was a Knight Bachelor. Williams of Kars was a G.C.B. and a Baronet before his death. Inglis of Lucknow was a K.C.B. Sir Charles Tupper is a Grand Cross of St. Michael and St. George as well as a Baronet. Sir T. Dickson Archibald, a son of Judge S. G. W. Archibald, master of the rolls, and a justice of the court of king's bench in England, was made a Knight Bachelor in 1873. Another eminent son, Sir Edward M. Archibald, consul-general of England in New York, was a K.C.M.G. The late Chief

on the importance of the North American colonies to Great Britain.[1] Sir Brenton's son John, clerk of the legislative council, was also for years a well known figure in Halifax society, though his only claim to celebrity was the fact that he had in his youthful days fought a harmless duel[2] with the great Liberal, Joseph Howe, who fired into the air. Howe had, in his opponent's opinion, reflected upon his father in the course of a criticism of the salaries of the bench at a time when there was a fierce conflict going on between the popular leaders in the assembly and the united legislative and executive councils, of which the chief justice was the most prominent member.

Judge Lewis Wilkins, the grandson of the loyalist, Isaac Wilkins, was a familiar figure for years on the streets of Halifax. In his general intercourse with men, and in his public utterances he assumed a great deal of dignity, which sometimes was called pomposity by his sarcastic friends, though it was well carried off by a tall and erect form. He was too apt in his speeches on the floor of parliament to sacrifice substance to form, and his witty brother gauged him fairly well on one occasion when in reply to the question—"Was not that a sound speech, Martin?" "Yes, Lewis, all sound." Still he was a learned lawyer and had scholarly tastes, which were characteristic of many men in the old times of Nova Scotia. Somehow old fashioned courtesy and graceful conversation are not so much cultivated in these practical days as in the old times, when common school education was confessedly wretched, but individualism was nevertheless stimulated by the habits of study and reflection, which men gave to every subject.

In those days I was editor of the *Halifax Reporter* and at the same time chief official reporter of the debates of the assembly. Under these circumstances I had the advantage of hearing some of the best men and reporting them as well, in association at first with the father of Sir John S. D. Thompson, and subsequently with that able man himself, who was

Justice of the supreme court of Canada, Sir J. W. Ritchie, was a Knight Bachelor. Sir Adams Archibald, Sir John Thompson, Sir Charles Hibbert Tupper and Sir John G. Bourinot received the K.C.M.G. Sir J. W. Dawson was a Knight Bachelor. Baron Halliburton was a G.C.B. before elevated to the Lords. The distinction of Knight Bachelor is chiefly official in its character, and is consequently conferred as a rule on judicial functionaries. The recipient has to pay a fee and has no right to decorations. The Orders are given, free of all expenses, for imperial or other special services, and carry with them a star and badge. The distinguished order of St. Michael and St. George is chiefly intended for services in the dependencies of the crown, and has the following motto on a badge (suspended by a Saxon-blue ribbon, with a scarlet stripe), *Auspicium melioris ævi.* Sir John Thompson was a "Right Honourable" as a member of the Queen's Privy Council.

[1] This essay is reprinted in the Reverend George Hill's "Memoir of Sir Brenton Halliburton, late chief justice of the province of Nova Scotia," published at Halifax in 1864. The essay also appeared in pamphlet form at Halifax in 1825 and in London, 1831.

[2] See "Life and Times of the Hon. Joseph Howe, with brief references to some of his prominent contemporaries, by G. E. Fenety, St. John, N.B., 1834." I find no reference to this incident in Howe's "Speeches and Letters."

to become the first minister of the Dominion, while I was—as I am still—the chief clerk of the House of Commons. It was my good fortune to hear the Honourable William Young, the leader of the Liberal party. He belonged to a Scotch family who came to Nova Scotia in 1815, when he was still a lad, and several members of whom besides himself were conspicuous in the public affairs of the

CHIEF JUSTICE SIR W. YOUNG, KNT.

maritime provinces. His father was an able member of the assembly for years and wrote under the pseudonym of "Agricola"[1] a number of valuable letters which gave a decided stimulus to agriculture on scientific principles. His brother George was a journalist and literary man of no

[1] "The Letters of Agricola on the Principles of Vegetation and Tillage written for Nova Scotia and published first in the *Acadian Recorder* by John Young, Secretary of the Provincial Agricultural Board, etc., Halifax." Printed by Holland & Co., 1822. 8vo., half roan, xvi., 462 and index of 10 pp. In Campbell's "History of Nova Scotia," a dull though accurate book, so far as it goes, I find the following anecdote of Mr. John Young and Mr. James Boyle Uniacke: "In a debate in the House of Assembly on a grant of money for the importation of horses for the province, several members expressed their opinion as to the most suitable breed. John Young was in favour of horses for farming purposes, of which he was considered a good judge. James B. Uniacke was in favour of importing horses, half-blood, and in his remarks spoke sarcastically about the kind of horses kept by Mr. Young, who lived at Willow Park, and which were occasionally employed in driving agricultural produce to market. Mr. Uniacke was an eloquent speaker, graceful in manner and appearance, and by his ready wit and a sly allusion to Mr. Young's cabbages, turned the laugh of the House against that gentleman. Mrs. Uniacke was a lady possessed of a large fortune at the time of her marriage, but happened, like many of the very best of her sex, not to be remarkable for her beauty. Mr. Young, who had sat dreamily listening to Mr. Uniacke, by-and-by rose to reply, and with a complacent smile beaming on his countenance, said: 'We, in Scotland, Mr. Speaker, select our horses upon the same principle that some gentlemen select their wives—not for their beauty but for their sterling worth.' All eyes were immediately on Mr. Uniacke, and there followed a universal burst of laughter."

mean qualifications and a politician of note for many years.[1] William Young's own Scotch shrewdness and tenacity of purpose, his vast store of legal knowledge and experience, made him a power at the bar and in politics, although his public utterances, always conspicuous for their Doric accent, failed to make any deep impression on my mind since I can hardly now revive them in my imagination. He was, however, a man of ripe scholarship and high culture though he never rose to the heights of eloquence which his great rival, James W. Johnston, often reached, or captivated the mind, like Joseph Howe, to both of whom I shall refer at length in a few minutes. His Scotch qualities of shrewdness and acquisitiveness enabled him to acquire a fair fortune, a goodly portion of which he devoted to public objects, especially to the construction of the roads

SPEAKER MARSHALL (1867).

over which the citizens of Halifax can drive so agreeably amid fragrant spruce groves through Point Pleasant Park, from which so noble a prospect can be had of the harbour and ocean glistening away beyond.

Both John J. Marshall and Martin Wilkins had lost their seats at the previous general election in 1859, but they were men of marked ability and were borne by the anti-confederation wave of 1867 into the legislature where one became speaker and the other attorney-general. Speaker Marshall—a descendant of a Loyalist—was a man gifted with great volubility of expression, but the attorney-general—a grandson of Isaac Wilkins—was by far more interesting to hear, since he added to the qualities of a great advocate a fund of natural humour which unfortun-

[1] "On Colonial literature, science and education written with the view of improving the literary, educational and public institutions of British North America, in three volumes, by Geo. R. Young, Halifax, N.S., &c., 1842. Only one volume was ever published."

ately is hardly now heard in our legislative halls at Ottawa and elsewhere, except when my versatile friend Mr. Nicholas Flood Davin now and then airs his Hibernian temperament. It was in 1860 that I first made the acquaintance of the present chief justice of Nova Scotia who, in later times, became a minister of justice of the Dominion. Many of my readers will remember how forcibly and even passionately he gave utterance to his opinions, and I can well imagine that before he accepted his present dignified position he must have been a most aggressive opponent to meet on the political platform. I can see before me the stately proportions of William A. Henry, afterwards a judge of the supreme court at Ottawa, also a prominent man in those days. He was an acute politician, gifted with a great flow of language, but it lacked clearness of expression and logical arrangement. He possessed many amiable qualities which made him very popular in a constituency, and I have heard it said that when there was a vote or two in question he would spend much time in his

SIR ADAMS G. ARCHIBALD, K.C.M.G.

district, and smoke many a pipe on the fences with the doubtful elector. On the supreme court he was a success, for he possessed an excellent judgment, and understood perfectly well that it was often a mistake for a judge to enter into a lengthy disquisition on the merits of a case. Another public man who won much distinction in the larger field of Dominion statesmanship, was Sir Adams Archibald, to give him his later title His suavity of demeanour was allied to sound legal attainments and a great fund of discretion, which won for him much confidence as a minister of the Crown and a lieutenant-governor, at a most critical period of the affairs of Manitoba. He was never a man of words, but rather one of thought and argument at opportune moments.

A. W. McLelan, who died in government house at Halifax, took a conspicuous part in the politics of his native province as a representative

of Colchester, as well as in those of the Dominion for a decade of years or so. His success was largely due to the fact that he was a shrewd man of Scotch descent, who never failed to make practical use of those opportunities for personal advancement, which often offer themselves to a keen politician in the operation of party government. His specialty was finance—he was a successful business man for some years before he entered politics—and his speeches were always carefully committed to heart and handed to the reporters in manuscript. Never did he rise to eloquence, but his studied essays were as icy as his general personal demeanour. He opposed the financial terms of the Quebec resolutions with some reason, and when they were amended largely to the advantage of Nova Scotia, and Joseph Howe felt it his duty to give up what was clearly then a useless opposition to federation, Mr. McLelan found it expedient, like all the opponents of federation in the House of Commons, to yield to the irresistible logic of circumstances, which held out abundant promise for the gratification of his personal ambition. He became a senator, a commissioner of railways, cabinet minister, and lieutenant-governor in succession to Mr. Matthew Richey. Though only a few years have passed since his death in government house before the expiration of his term of office, his name is almost forgotten, perhaps because his career was in some degree selfish—more noted for the attainment of office than for the display of qualities which appeal to the hearts and sympathies of men and women.

Another eminent man who became a member of Dr. Tupper's ministry with a seat in the legislative council, when Mr. Johnston was elevated to the bench, was the Honourable John W. Ritchie, a member of a family identified with the history of Nova Scotia for a century, and distinguished for having given not only a chief justice to Canada but three judges to Nova Scotia.[1] His reputation rested chiefly on his legal knowledge which was very extensive and sound, and on his acuteness of intellect which made him an admirable legal counsel, but he occupied no notable place in the political life of the country, and never attained any measure of popularity in the province at large. He became a member of the Senate, when first organised, and was very soon appointed to the judicial bench for which his long legal experience and intellectual temperament eminently fitted him.

Jonathan McCully, who sat in the legislative council—for he never

[1] Judge Savary in the History of Annapolis (p. 396) gives a list of members of the Ritchie family, distinguished in politics, law and divinity. The most notable are Hon. Thomas Ritchie, judge of the inferior Court of Common Pleas,—the second son of John Ritchie, M.P.P.—who was father of Hon. J. W. Ritchie, mentioned above; Sir W. J. Ritchie, Chief Justice of Canada; Hon. J. Norman Ritchie, judge of the Supreme Court of Nova Scotia. The first Judge Ritchie filled an important place in the legislative history of the province from 1806 until 1824, during which long period he was elected continuously without opposition.

obtained a seat in the assembly—was chiefly influential for years as an editorial writer on *The Morning Chronicle*. Senator Dickey was a Conservative member of the council, which he left in 1867 to take a prominent place in the senate of Canada, where his aged, bent figure—such a contrast to the dapper, well-dressed figure of old times—can still be seen. His colleague from the same county of Cumberland, Mr. Alexander McFarlane, has quite recently joined the ranks of the great majority, and only Senator Miller is now left to represent the original twelve members who were appointed from Nova Scotia in 1867. He is, however, a much younger man than those I have just named and consequently takes still an active part in the debates and proceedings of the upper house, where his facility of speech and incisiveness of argument make him a factor of importance at critical times.

PROVINCE BUILDING AT HALIFAX
From Haliburton's Nova Scotia.

III. The Old Province Building and Its Associations.—But time warns me that I must not dwell too long on men, who were, after all, minor figures on the political stage of those days, but should now pass on to the two statesmen who above all others, occupied the larger share of public attention forty years ago. One was James W. Johnston, a descendant of a Georgia loyalist, who represented for many years the aristocratic and conservative traditions of that class—the other was Joseph Howe, also the son of a New England loyalist, who became a leader of the people, in some respects the "Sam Adams" of Nova Scotia, though never disloyal to the crown or prepared to press his arguments to the arbitrament of revolution.

Between two of the principal and oldest streets of Halifax there is an old brown stone building, well darkened by the damp sea air and coal

LEGISLATIVE COUNCIL CHAMBER.

From a photograph by Notman.

smoke of the dingy city of Halifax—a building which has for three-quarters of a century been the centre of the political conflicts that have always agitated a province noted for the virulence of faction as well as for the eloquence and genius of the men who have administered its public affairs and spoken within its legislative halls. It was in 1811 that the lieutenant-governor—that Sir George Prevost, whose name will be always associated with the discreditable affairs of Sackett's harbour and Plattsburg in the war of 1812-14—laid the foundations of the new "Province Building," between Hollis and Granville streets, and expressed the hope that "the building would perpetuate the loyalty and liberality of the people of Nova Scotia"; a hope realized by the conduct of that people on all occasions when they have been called to prove their fidelity to the British empire. It was not, however, until 1819 that this edifice, then justly considered the finest of its class in America, was formally opened for the purposes of public business by the Earl of Dalhousie, afterwards governor-general of Canada, who stated in the presence of a brilliant assemblage that it would always remain "to the latest posterity a proud record of the public spirit at this early period of our history." With the growth of the British-American provinces in population and wealth this old "Province Building" has been left behind, and now seems, at first sight, small and inferior in accommodation, compared with the great structures that have been raised at Toronto and Quebec; bnt nevertheless it has a certain grandeur of its own as we glance over its well-proportioned, simple and massive exterior, only ornamented by stately Ionic columns, surmounted by a well cut representation of the royal arms. The dark tint that the stones have assumed in the course of years gives the whole structure an appearance of antiquity which is quite refreshing in these days of modern improvements, and recalls the many interesting historic associations that cling to its venerable walls. The interior of the building itself has been very little changed since the days it was opened with so much ceremony by Lord Dalhousie, and it was described by a contemporary writer as "the most splendid legislative building" on the continent. The building contains the two legislative chambers, a small library and provincial offices, all of which are reached by gloomy corridors and stairs redolent with the odours of age. No marble pillars or tiled floors meet the eye as in later structures of a similar kind; but the whole aspect is sombre and uninviting until we look into the handsome legislative council chamber,[1] which has fine proportions and a

[1] Around the walls of this historic chamber are portraits—some of great value by famous painters—of George II. and Queen Caroline, George III., Queen Charlotte, William IV., Chief Justices Sir Thomas Strange (by Benjamin West) and Sir Brenton Halliburton, Judge Halliburton ("Sam Slick"), Sir W. Fenwick Williams, Sir John Inglis, Major General Sir Charles Hastings Doyle, the first lieutenant-governor after Confederation. A brass tablet in honour of the famous navigator, John Cabot, also occupies a conspicuous place on its walls. The four hundredth anniversary of his voyage of 1497 was celebrated in Halifax by the Royal Society of Canada on the

simple architectural beauty, very pleasing to the eye in these days when the tendency is to lavish ornate decoration on our public buildings. Nova Scotians, however, like the present writer, who have known these legislative halls for half a century, will dwell little on their architectural characteristics, but will rather recall the voices and faces of those distinguished men, statesmen, orators, poets, humourists, historians, and publicists, whose feet have echoed on the gloomy stones of the lobbies that lead to the chambers, with which must always be associated the most striking episodes in the political history of the peninsula of Acadia.

As I remember the chamber of the assembly thirty years ago, the members formerly sat on a raised platform, below which was a lounging place to which strangers had access. The Speaker's chair was then at the upper or west end, and the members sat on benches or long sofas on either side of the clerk's table. Now the room has been made smaller, but the old simple decorations of the ceiling can still be seen. The Speaker's chair now faces the main entrance or what was once a side of the chamber, while the members have separate chairs, covered with that old-fashioned, though durable horse-hair cloth which is generally relegated to second-rate rural hotels and steamboats. What interests us most in this chamber, where some of the most brilliant orators of British North America once spoke, are the full length portraits of two men, famous in their day—two names long associated with the struggles, victories and defeats of the Conservative and Liberal parties in Nova Scotia. To the right of the Speaker is the picture of Joseph Howe, somewhat coarsely painted, giving him, perhaps, too harsh an expression, but still on the whole an excellent portraiture of the printer, poet and politician, whose name will always be connected with the triumph of responsible government in his native province. On the other side of the chair is the more intellectual face and bent figure of James William Johnston, the eminent lawyer and jurist, who was for a quarter of a century and more the able leader of the Conservative party and the earnest opponent of Joseph Howe. The names of these two men were for years household words in Nova Scotia, as representing widely antagonistic principles, though sometimes meeting and acting together on the common patriotic ground of the public welfare.

24th June, 1897, "when"—to quote a part of the inscription on the tablet—"the British Empire was celebrating the sixtieth anniversary of the accession of Her Majesty Queen Victoria, during whose beneficent reign the Dominion of Canada has extended from the shores first seen by Cabot and English sailors four hundred years before, to the far Pacific coast." See Trans. Roy. Soc. Can. for 1897 for full account of the proceedings on the unveiling of the tablet. The Archbishop of Halifax, Dr. O'Brien, was president of the Society that year, and the present writer the honorary secretary. His Excellency the Earl of Aberdeen, governor-general, and His Honour M. B. Daly, lieutenant-governor, took part in the ceremony.

HOUSE OF ASSEMBLY CHAMBER.

From a photograph by Notman.

IV. Honourable James William Johnston.—It is quite probable that few persons in Canada, outside of the maritime provinces, are familiar with the name of James William Johnston though he exercised in his lifetime large influence in the legislative halls and in the law courts of Nova Scotia. Indeed the ignorance that prevails in Ontario with respect to our political history is surprising. To verify a fact or date, I have just turned over the pages of the "American Cyclopædia of Biography," but the name of this distinguished Nova Scotian does not appear though space is devoted to vastly inferior men in the several provinces. The portrait that recalls his memory in the Commons House of Nova Scotia, where he was so long an honoured leader, delineates a face of great intellectual power, with its finely cut features as if chiselled out of clear Carrara marble, his prominent brow, over which some scanty white hairs fall, his earnest, thoughtful expression, and his bending form, which tells of unwearied application to the many responsible and arduous duties that devolved upon him in the course of a busy life as lawyer and politician. The portrait I give presents him when age had accentuated all the forces of his character and the cares of his life, in the very expression and lineaments of his visage. He was, during his life, the chosen friend and adviser of governors, during the most critical period of the history of responsible government. He was a Tory and an aristocrat by education and inclination, but the annals of the legislature show he was not an obstinate opponent of reform, when he came to believe conscientiously that the proposed change was really a reform. A great lawyer in every sense of the term, an impassioned orator at times, a master of invective, a man of strong and earnest convictions he exercised necessarily a large power in political councils, and did much to mould the legislation of the province. His speeches, however, were too often the laboured efforts of the lawyer, determined to exhaust the argument on his side—in this respect he resembled Edward Blake in these later days—and he had none of the arts of Joseph Howe, whose eloquence had more of nature and capacity to reach the hearts and sympathies of the people. He had no deep sense of humour or ability to amuse an assembly—qualities indispensable for a great popular leader, especially on the platform. At rare times, however, he forgot the lawyer and gave full scope to the pent-up fires of a man in whose veins flowed the hot blood of the tropics, for he was not a Nova Scotian, but a West Indian by birth. It is an interesting fact that, while a Tory by education and aspiration, he was more than once an advocate of most liberal and even radical measures, one of which, simultaneous polling at elections—or the holding of elections on one and the same day—he himself carried ten years even before it was thought of in the Canadian provinces. To him more than any other does Nova Scotia owe the relief from the monopoly of the coal mines, long held by an English company under a royal charter given to a

royal duke who sold it for jewels for his mistresses. When responsible government was in full and satisfactory operation, he advocated an elective legislative council—a certain number of members retiring periodically—with the avowed object of solving what has been for years a problem with some Canadian thinkers—to preserve and at the same time strengthen the upper house in our system of government. Mr. Johnston was also a sincere and earnest prohibitionist, and attempted, unsuccessfully, in 1855, to pass a measure to prohibit the sale and manufacture of liquor in the province; a measure which evoked the sarcasm of Joseph Howe, who never believed in its practicability and had no objection to the moderate use of wine, though he himself was a man of most abstemious habits at a time when over-indulgence was unhappily not uncommon in the public and social life of the province. He was the first British American to propose and carry in a provincial legislature a resolution in favour of a union of the provinces "as calculated to perpetuate their connection with the parent state, promote their advancement and prosperity, increase their strength and influence, and elevate their position in the empire." It was on this memorable occasion that Joseph Howe delivered a speech on the organization of the empire in which he gave most eloquent expression to his imperial sentiment and advocated that federation of the empire which in these later days has found so many able and enthusiastic exponents.[1] It is an interesting fact that loyalists or their descendants—notably Chief Justice Smith of Lower Canada, in 1789,[2] Chief Justice Sewell, of Lower Canada, in 1814,[3] and Messrs. Johnston and Howe in 1854—should have been the first to urge such a scheme of colonial union as was vainly pressed by Joseph Galloway on the attention of the colonial congress in 1774, as a means of adjusting the serious difficulties which had arisen between the thirteen colonies and the parent state.[4]

In social intercourse, Mr. Johnston appeared much buried in his thoughts and never displayed those magnetic and sympathetic qualities that made Joseph Howe so widely liked by all classes, especially the poor

[1] See Appendix I for a full report of this eloquent address. Mr. Howe's famous speech on this occasion is also given in Appendix J.

[2] See Kingsford's "History of Canada," vol. VII., p. 311. Chief Justice Smith had also been a justice of the supreme court of New York.

[3] See Sewell's "Plan of Union," London, 1814, and Lord Durham's Report, 1839. Chief Justice Sewell was a son of the last attorney-general of Massachussets, as an English colony, and became chief judge of Lower Canada in 1808. He was succeeded in 1838 by the son of another loyalist, Sir James Stuart, Bart.

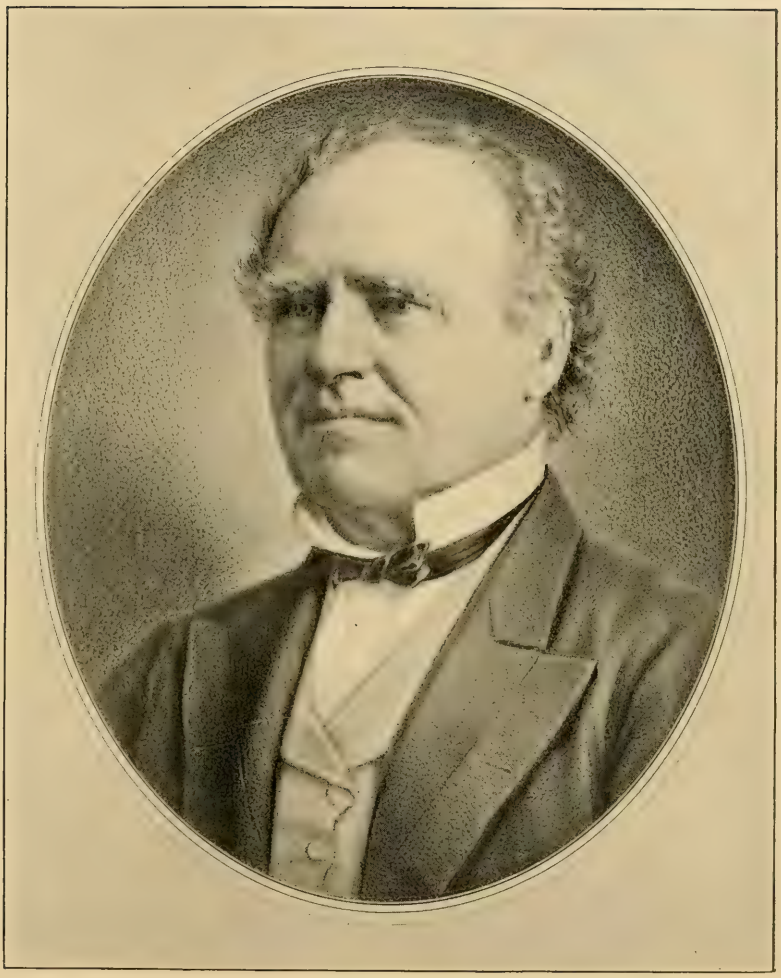
[4] See pages 50-52 in "The Examination of Joseph Galloway, Esquire, late Speaker of the House of Assembly of Pennsylvania, before the House of Commons in committee on the American Papers, with explanatory notes. London, 1759." An edition of this scarce pamphlet was printed at Philadelphia in 1855 by the Council of the Seventy-Sixth Society. See also vol. I., pp. 371-373 of "The Literary History of the American Revolution, 1763-1783. In 2 vols., by Professor Tyler, of Cornell University. New York and London, 1897."

HON. J. W. JOHNSTON.

From a portrait taken in his 63rd year.

and humble. For many years the prize he had always in view was the chief justiceship—the natural ambition of a great lawyer. The contest lay between him and William Young, of whom I have already briefly written. Both in politics and law Johnston and Young were rivals; their aim was the same, the leadership of the government, and the chief justiceship as the crowning result. The office had been already held for very many years by Sir Brenton Halliburton—no relative of the famous humorist, also a judge whose name must be spelled with only one "l." When the contest was at its height Sir Brenton was an octogenarian and his usefulness was fast disappearing, but he held on with persistency, to the great anxiety of Conservatives and Liberals, who wished the prize to fall to their respective chiefs, Johnston and Young. One day Sir Brenton died and unhappily for the aspirations of the Conservative leader, the Liberals were in office, and William Young became chief justice and was afterwards knighted. It was undoubtedly a blow to Mr. Johnston, not quite mitigated by his subsequent appointment as chief judge in equity—an office made specially for him by the Conservative party as soon as they came into power. New generations have grown up since Mr. Johnston was a force in law and politics, and his name seems fast fading away from the memory of the people of the province where he laboured so earnestly and conscientiously. His speeches have never been collected in a volume, but it is questionable if they would now be read, since they were, as a rule, powerful political and legal arguments intended for present effect, and not replete with those graces of literary culture and eloquence that still make the best efforts of Howe and McGee quite readable. He was no writer and consequently we have no memorial of his undoubted genius except in the statute book and the official debates which can be found in pamphlet form or in the old files of the party newspapers. He was a pure and incorruptible politician, and despite his natural aspiration for the chief justiceship, to win it he would never have sullied his character by corruption or intrigue. Although he had, for a while, doubts as to the successful operation of responsible government, once it was won, he used his great talents to work out its principles with fidelity to the crown and people. He remained on the equity bench from 1863 to 1872, when he visited Europe with the hope of prolonging a life which was too obviously ebbing to its close. He would have been appointed lieutenant-governor of the province in succession to Joseph Howe, but relentless fate intervened and Nova Scotia was not permitted to welcome the great Conservative chieftain and distinguished jurist to that venerable building, which in old times of conflict, before the union of the provinces, seemed so far beyond the reach of colonial politicians, though it had so frequently for its tenants far inferior men from the parent state, who happened to be favourites with Downing street and imperial politicians.

V. Honourable Joseph Howe.—As I recall the portrait of the most famous Nova Scotian of his time—famous for the brilliancy of his eloquence and his wide popularity in the province where he struggled successfully for the people's rights—I can still see in my mind's eye the face and figure of Joseph Howe, when he stood by the clerk's table in the session of 1860, answering Dr. Tupper, who was the most formidable opponent the Liberal leader ever met in the political field. Howe was claiming the victory for the Liberal party at the elections in 1859—a claim which was denied by Dr. Tupper, then provincial secretary. Much excitement existed in political circles on account of the government being defeated by a small majority, made up of a few members who held certain offices and were notoriously ineligible. The Conservatives endeavoured to force Lord Mulgrave, then lieutenant-governor, to interfere and even to go as far as to grant them a dissolution on the ground that the members in question were disqualified and could not legally sit. Lord Mulgrave refused to interfere in a matter which was clearly within the exclusive jurisdiction of the House itself, and the Conservative party never forgave him when the government was forced to resign and the Young-Howe administration was formed, as a consequence of his action. Mr. Howe, on the occasion to which I am referring, was defending the attitude of his party, which was using the votes of the disqualified men to come into office. Then, as always when excited, he had thrown his coat back on his shoulders and denounced his opponents with his forefinger pointed at them individually, and with all that scornful accent which his voice could assume on momentous occasions. He was a very ready and versatile debater, but his greatest and most readable speeches were the results of careful study and preparation, although never written out in full and memorized. He used notes, but not to a very great extent, depending chiefly on his memory of the arguments that he had previously passed through his mind when preparing for a debate. Although I reported many of his speeches in the years when I sat at a desk with the late premier of Canada on the floor of the old chamber, a little beyond where the Speaker's chair is now placed, I never saw a manuscript of any of them; but he was a merciless corrector of proofs, and gave the printers a great deal of trouble, although he had been in his young days, a compositor and knew something of the trouble of "over-running" in his long journalistic experience. The fact is, he was a very keen critic of his own performances, and attached great importance to the literary finish of his speeches and to their easy reading—an explanation of the interest and pleasure one can now take in the published volumes of his addresses. He did not speak entirely for the present but for future generations. His massive head was set on a sturdy framework, his eyes were always full of passionate expression, his voice had a fulness and a ring of which he had a most complete mastery, his invective was as



HON. JOSEPH HOWE.

From a portrait taken in his 60th year.

powerful as his humour was catching and his pathos melting. Indeed he had a sense of humour and a capacity for wit which has never been equalled by any public man I have ever met in public life. Among his compeers, at a dinner or supper table, this humour was at times a "little robust," to use the expressive phrase given me by a former governor-general of Canada. He was like Sir John Macdonald in this particular, though far superior to him in originality of wit and power to tell a good story. Howe's sense of humour, his personal magnetism, and his contempt for all humbugs, his sympathy for human weaknesses and frailties, added to his earnest advocacy of popular liberties, deservedly won for him a place in the people's hearts, never held before or after him by a public man in Nova Scotia. He was the most magnetic speaker who ever stood on the public platform in the Dominion: he could sway thousands by his flights of eloquence, and lead them to follow him as if he were the shepherd of a flock of political sheep. Even his opponents loved to listen to him in his palmy days in a province where there has been always a great deal of political bitterness. In the homes of the people he was always welcome, the children loved to hear his stories, and the girls never objected to be kissed by him. He was vain of his popularity, but his vanity was that peculiar to all great men and never obtrusively displayed. It was the vanity that spurs men to greater efforts and to make the best use of their abilities. He was always a loyal subject of the crown, and when Papineau and Lyon McKenzie were luring their "patriot bands" to certain ruin, Howe was urging counsels of moderation, and was not ready to go beyond lawful constitutional agitation to force the Imperial authorities to grant Nova Scotians a larger measure of self-government In taking this course he was animated by the same loyal sentiments which distinguished his father and other loyalists who were not prepared to resort to the arbitrament of war but honestly believed that all vexed questions between the mother country and her recalcitrant colonies could be eventually settled by legitimate constitutional methods. During the movement for confederation he found himself in the unfortunate position of opposing a union to the advocacy of which his most eloquent address had been mainly devoted many years previously. It was most unfortunate for the success of this great national measure that so powerful an orator and leader of the people should have thought it his public duty to assume an attitude of hostility which eventually brought the province to the very verge of revolution.

Howe was never in his heart opposed to union in principle as I know from conversations I had with him in later times, but he thought the policy pursued by the promoters of confederation was injurious to the cause itself—that so radical a change in the constitution of the province should have first been submitted to the people at the polls, and that the terms arranged at Quebec were inadequate in the main. In one respect

he was right, and that was in believing that the energetic and, in some respects, hasty action of the Nova Scotia leaders of confederation was certain to create a bitterness of feeling against any scheme of union, which might sooner or later endanger even Imperial connection. When Howe gave up the fight against confederation, and accepted the "better terms," which were the result of the contest he fought from 1865 to 1868, it was with the honest conviction that no other course was open to one who valued the preservation of British interests on this continent. He understood above all other statesmen the value of confederation if fairly worked out, and the dangers of isolation; and when he had won for his province more favourable financial terms he withdrew from a hostility which was not reconcilable with his former advocacy of a scheme of union and with his desire to perpetuate British institutions on this northern half of America. His action at this critical time in our political history lost him many staunch friends in his own province, and no doubt he was, until his death, sometimes an unhappy man when he fretted under the difficulty of bringing his associates and supporters of a long political career to understand the loftiness of his motives and the true patriotism that underlay his whole conduct at this critical stage in the history of the Canadian Dominion.

Howe left behind him two volumes[1] of speeches and addresses which he delivered in the course of his long and chequered career, with an appendix containing the letters he wrote to Lord Russell on responsible government—the ablest exposition of the subject written by any of the actors in those stirring times. These volumes have on the title page the name of William Annand as the editor, but it is well known that Mr. Howe himself collated and corrected all these speeches and letters which cover the most momentous period in the history of Nova Scotia. Mr. Annand was chiefly noted as the publisher of *The Morning Chronicle* and *Nova Scotian*, the organs of the Liberal party, and as the friend and follower of Joseph Howe for many years. Intellectually he was weak but his paper and his friendship gave him a sort of factitious weight in public affairs. It was men like Howe, Jonathan McCully, and other strong writers in the Liberal party who, before 1867, gave vigour to the editorial columns of *The Chronicle*. However, Mr. Annand thought he saw his opportunity when Mr. Howe entered the dominion government, to become a leader himself, and refused to bow to his former idol, but used his best efforts to destroy his usefulness in the province. While the friendship was real, and Mr. Annand was nominally editing Howe's "Life and Letters," he might have performed a useful task if he could have actually devoted himself to give us an insight into his great friend's

[1] "The speeches and Public Letters of the Hon. Joseph Howe, edited by W. Annand, M.P.P., Boston, Halifax and Montreal; 2 vols., 1858."

character, some accounts of his inner life, some stories of his humour and wit, some description of those personal traits which delight all readers, which give such a charm to Boswell's Johnson, and Lockhart's Scott. As it is, however, Mr. Howe attempted no more than to give a very meagre account of his own life, and a short and even inadequate historical narrative to explain each speech and address. His speeches and letters, however, were corrected by him with a careful literary hand, and are well worthy the study of every young man who wishes to think well of his country and imbue himself with the true principles of political liberty and sound patriotism. Although delivered so many years ago they can still be read with pleasure and profit, replete as they are with passages of striking eloquence and illustrating his deep study of the great masters of thought, wit and oratory. It is his graces of style—evidence of how deeply he had drunk from the well of English undefiled that give to his speeches and letters a value and interest that cannot be found in the efforts of any other public man of British North America. We find more incisive debating power, closer argument, more legal and constitutional learning, in the great speeches of Mr. Johnston and other contemporaries, but in none of them is there that rare genuine eloquence, that wealth of illustrations drawn from the masters of English prose and poetry, that originality of idea, that comprehension of what constitutes true political liberty, which we find in the speeches and letters of the famous Liberal of Nova Scotia.

His career was in many respects most remarkable, from the day he worked at the compositor's case until he died in that old brown stone government house which has stood for the greater part of this century a few blocks from the somewhat younger province building. During the hot fight he carried on against Lord Falkland, who was sent out to Nova Scotia as a lieutenant-governor at a most critical stage of its constitutional history, he found himself actually shut out from the hospitalities of government house and was "cut" by the governor and his friends. Indeed, it could hardly have been otherwise, as Howe fiercely attacked Lord Falkland for his very doubtful course during a time when impartiality and tact were qualities indispensable in a governor, called upon to work out responsible government at its very inception. The lieutenant-governor had been chosen unfortunately for Nova Scotia—for he was not a strong man intellectually—to conciliate the popular leaders and give them a legitimate share in the government, but it was not long before he practically found himself at the head of the Tories and engaged in a conflict with Howe and his friends. He even so far forgot his dignity as to publish a letter in his own defence in the public press. Howe wrote as well as he spoke; he could be as sarcastic in verse as in prose, and Lord Falkland suffered accordingly. Some of the most patriotic verses ever written by a Canadian can be found in his collection

of poems; but relatively very few persons nowadays recollect those once famous satirical attacks upon the lieutenant-governor, which gave much amusement to the people throughout the province, and made his life almost unbearable. These verses contain too many local allusions to be appreciated by those who are not thoroughly conversant with the history of those times, and I shall content myself with a quotation from "The Lord of the Bedchamber," an allusion to one of the positions previously held by Lord Falkland. The following verses show the lieutenant-governor's opinion of the troublesome house of assembly, and his way of conciliating some of its unruly elements:—

Lord Falkland is supposed to be in the privacy of his bedroom at government house waiting for a reply to a message he had sent some time before to the people's house.

"No answer. The scoundrels, how dare they delay,
Do they think that a man who's a peer
Can thus be kept feverish, day after day,
In the hope that their Speaker'll appear.

"How dare they delay when a Peer of the Realm,
And a Lord of the Bedchamber too,
To govern them all has been placed at the helm,
And to order them just what to do!

"Go D—dy; go D—dy [1]; and tell them from me.
That, like Oliver Crom., I'll come down,
My orderly sergeant mace-bearer shall be
And kick them all out of the town.

Then his Tory friend ventures to hint that it might not, for him, be safe to repeat what the governor had said.

"They've got some odd notions, the obstinate crew,
That we are their servants—and they
A sergeant have got, and a stout fellow too,
Who their orders will strictly obey.

"Besides, though their leader and I have averred
That justice they soon shall receive,
'Tis rather unlucky that never a word,
That we say will the fellows believe.

"How now, cries his Lordship, deserted by you,
I hope you don't mean to retire,
Sit down, sir, and tell me at once what to do,
For my blood and my brain are on fire.

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[1] Mr. Dodd, afterwards a justice of the supreme court, and a strong Tory during his political career. He lived in Sydney, where I knew him well in my boyhood.

Then the governor's friend suggests a method of settling matters, quite common in these as in old times.

"Suppose; and his voice half recovered its tone,
You ask them to dinner, he cried,
And when you can get them aloof and alone
Let threats and persuasion be tried.

"If you swear you'll dissolve, you may frighten a few,
You may wheedle and coax a few more,
If the old ones look knowing, stick close to the new
And we the opposition may floor.

This advice was obviously palatable to his Lordship.

"I'll do it, my D—dy, I'll do it this night,
Party government still I eschew,
But if a few dinners will set you all right,
I'll give them and you may come too.

"The Romans of old, when to battle they pressed
Consulted the entrails, 'tis said,
And arguments if to the stomach addressed,
May do more than when aimed at the head."

In this way Howe and the political fighters of the maritime provinces diversified the furious contest that they fought with the lieutenant-governor, and it was certainly better that the people should be made to laugh than be hurried into such unfortunate uprisings as occurred in the upper provinces. Happily such a style of controversy has also passed away with the causes of irritation, and no Lord Falkland could be found nowaday to step down into the arena and make a personal issue of political controversies.

But Howe's genius as a poet was better illustrated by other poems before me as I write than by satirical verses called forth by heated political controversies, and now almost forgotten with the death of the men who took part in them. In the little volume of verses, which one of his sons[1] had printed and published after his father's death, we see something of the true nature of the man—his love of nature and her varied charms, his affection for wife, children and friends, his fervid patriotism, his love for England and her institutions. No poems ever written by a Canadian surpass, in point of poetic fire and patriotic ideas, those he wrote to recall the memories of the founders and fathers of our country. Great as were his services to his native province and to Canada—for had he continued to oppose confederation, Nova Scotia would have remained much longer a discontented section of the Dominion—we look in vain in the capital or any large town of Nova Scotia, for a monument

[1] "Poems and Essays, by the Hon. Joseph Howe, Montreal, 1874." Collected by his son Sydenham Howe, who contributes a short preface.

worthy of the man and statesman; for such a monument as has been raised in several cities in Canada to Sir John Macdonald, who in some respects was not his equal, and not more deserving of the gratitude of his fellow countrymen. Howe's life was rarely free from pecuniary embarrassment, fortune never smiled on him and gave him large subscriptions and possessions of land and money, the *res angusta domi* must at times have worried him. He had an aim before him—not wealth, but his country's liberty and her good. It was, however, a fitting termination to his career that he should have died a tenant of that very government house whose doors had been so long in old times obstinately closed against him. His voice had been often raised in favour of appointing eminent Canadians and Nova Scotians to the position of lieutenant-governor; and he was wont in some of his speeches to make caustic comparisons between the men of his province and the appointees of Downing street.

Stern destiny, which is ever playing such pranks with poor humanity, with statesmen as well as mechanics, with the greatest as well as the humblest of mortals, placed him for a while—too short a while—where Falkland had lorded it over him and others, and where he could recall the past with all its trials and struggles, humiliations and successes; and then Fate, in its irony, suddenly struck him down, and the old government house lost the noblest and greatest man who ever lived within its walls. As I close this imperfect tribute to a man whose broad statesmanship and undoubted genius I recalled as I stood last before his portrait in the assembly room of the Province Building, I ask his countrymen to remember his own noble verses, and apply them not only to the famous Liberal orator, poet and statesman, but also to his eminent opponent, the Conservative chief, who, like himself, was an honest conscientious man differing in principles, but equally influenced by lofty aspirations:

"Not here? Oh yes, our hearts their presence feel;
Viewless, not voiceless, from the deepest shells
On memory's shore harmonious echoes steal,
And names, which, in days gone by, were spells,
Are blent with that soft music. If there dwells
The spirit here our country's fame to spread,
Where every breast with joy and triumph swells,
And earth reverberates to our measured tread,
Banner and wreath will own our reverence for the dead.

"The Roman gather'd in a stately urn
The dust he honored—while the sacred fire
Nourished by vestal hands was made to burn
From age to age. If fitly you'd aspire,
Honour the dead; and let the sounding lyre
Recount their virtues in your festal hours;
Gather their ashes—higher still, and higher
Nourish the patriot flame that history dowers,
And o'er the old men's graves go strew your choicest flowers."

HON. SIR CHARLES TUPPER, BART., G.C.M.G.

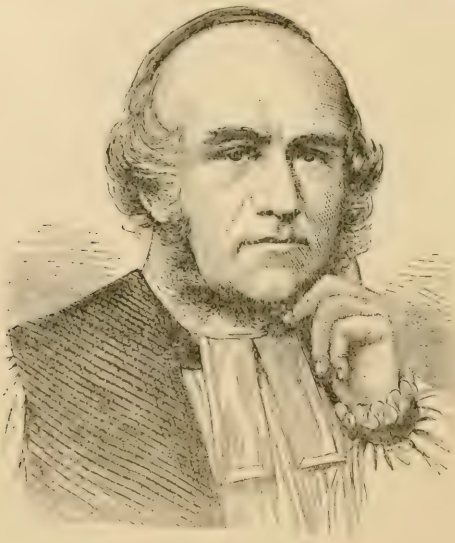
At age of 77.

VI. Sir Charles Tupper, Sir John Thompson, and others.—On the retirement of Mr. Johnston from the field of political competition the leadership of the Conservative party devolved naturally upon Dr. Tupper, a descendant of a pre-loyalist stock. He became one of the most influential actors in the public affairs not only of Nova Scotia but of the new Dominion. He established the present admirable system of public education in the country, where it was previous to 1864 in a most deplorable condition. It was largely through his remarkable pertinacity that the Confederation was eventually established, and though so many years have passed since those eventful and trying times, he is still an active and conspicuous figure in political life, while the voices of his famous compeers have long since been hushed in the grave. He continues to show that tenacity of opinion, that power of argument, that confidence in himself, and that belief in Canada's ability to hold her own on this continent, which have been always characteristics of a remarkable career, and though he is now drawing to the end of his eighth decade of years, time has in no sense dimmed his intellect, but on the contrary he is capable of the same vigorous oratory which was first displayed in the old chamber of the assembly of Nova Scotia, while the progress of age has only given additional breadth to his statesmanship.[1] It does not, however, fall within the scope of this paper to refer to men who are still alive. The time has not come for speaking calmly and dispassionately on the merits of men like the venerable chief of the Opposition who has, naturally, in the course of a remarkable life, evoked many antagonisms. Be that as it may, Nova Scotians, Liberals and Conservatives alike, cannot fail to admit that his intellect, energy and oratory, entitle him to the highest place in the roll of Nova Scotia's most distinguished statesmen.

I have still before me the well-known figure of Sir John Thompson, the friend of my early manhood as well as of later years. All will admit he was a statesman of worthy ambitions and noble motives, a remarkable close reasoner, and a logical speaker who had hardly an equal for clearness of expression in the House of Commons of Canada. His life in the Dominion field of politics was one of promise rather than of performance in successful statesmanship, and I doubt very much if he could ever have been willing to master all the arts and intrigues of a successful politician. In him Canada lost a man who, above all others, would have brought to the supreme court of Canada, or to the judicial committee of the privy council of the empire a clearness of intellect, a soundness of judgment, and an accumulated store of legal knowledge as well as intensity of purpose which would have been invaluable to this country during this practically formative stage of our constitution ; but that obdurate fate, which has hovered over the Conservative party since the death of Sir John Macdonald, the great prime minister, struck Sir John Thompson

down almost at the foot of the Throne and placed Canada in mourning for one of her sons torn from her in the pride of his intellect.

It was my good fortune to win the kindly regard of Bishop Binney, who was a native of Sydney, though he left that place at a very early age, and subsequently received all the advantages of Oxford University, where he won much distinction. As head of the church in the province he evoked much antagonism during his administration, on account of his great determination of character which brooked no opposition, and his pronounced high church views, which he always asserted as the true historic principles of the church. Now that the mellowing influences of time have softened the asperities of the bitter past, those who think of the bishop and knew him best must bear willing testimony to the depth



BISHOP BINNEY.

of the kindly and generous feeling that he had always in his heart for his friends and even for his opponents when they met him in a spirit of fair play and sincerity. If he was unbending at times when he believed a great principle was at stake, it is well now to remember he was influenced by strict conscientiousness and lofty motives. In his social life he was remarkably hospitable and was not niggardly of his means when the poor clergy came to his doors, which they found always "on the latch.".

VII. Some Famous Soldiers.—It was my good fortune over thirty years ago to meet and converse on more than one occasion with the hero of Kars, who became for the first time since his boyish days in Annapolis Royal, intimately associated with the public affairs of Nova Scotia as lieutenant-governor in 1865. Sir William Fenwick Williams was ap-

RT. HON. SIR JOHN THOMPSON, K.C.M.G.

From a photograph by Topley of Ottawa.

pointed at that critical moment when the provinces were threatened by the Fenians and the federal union was trembling in the balance. The imperial government felt it was advisable that an officer of signal military ability should be stationed in the maritime provinces—for General Hastings Doyle was more remarkable for his careful uniform and padding and social graces than military experience—and that every possible influence should be brought to bear on the unstable politicians who were opposing the consummation of this imperial and intercolonial measure. A man of high conceptions, broadened by contact with able statesmen of many nations, raised far above the petty jealousies, rivalries and prejudices of a small colony always noted for the intensity of its party

GENERAL SIR F. W. WILLIAMS, BART., G.C.M.G., OF KARS.

conflicts, he recognized the danger under existing conditions of the continued isolation of Nova Scotia from the other British North American provinces. No doubt he considered it his duty to use his persuasive tongue and gift of clear and conclusive argument to promote the realization of the project to which his deliberate judgment was completely wedded. Of the extent or value of his influence on the uncertain minds of some opponents of confederation, it is impossible for me to say anything definite, and all we positively know is the historic fact that during his short administration of the government Dr. Tupper, then premier, succeeded in bringing Nova Scotia into the federal union with the consent of a large majority of the legislature. General Williams, in appearance,

came fully up to the ideal one forms of a brave soldier, though in the ordinary relations of social life he was full of *bonhomie* and genial talk, which gave no one the thought that he was the same man whose gifts of command so completely swayed the garrison at Kars amid the most extraordinary privations, and whose resolute courage had won the admiration of the Russians, who only conquered him by the horrors of starvation.

I pause for a moment in the recording of these desultory reminiscences, to recall to the memory of his countrymen and countrywomen the unqualified praise which General Williams's indomitable courage drew from friends and foes alike when the defenders of Kars were forced at last to capitulate. "General Williams," said Mouravieff, the Russian general to whom the fortress surrendered, "You have made yourself a name in history, and posterity will stand amazed at the endurance, the courage, and the discipline which this siege has called forth in the remains of an army which has covered itself with glory and yields only to famine." In the English House of Commons, Lord Palmerston said: "A greater display of courage, or ability, of perseverance under difficulties, or of inexhaustible resources of mind, than was evinced by General Williams, never was exhibited in the course of our military history." In the House of Lords the Earl of Derby paid his tribute in these eloquent words: "I would say to those gallant spirits, to Williams, to Teasdale, to Lake and Thompson, 'you may rest assured that this house and the country deeply sympathize with you in your misfortunes, and we honour the valour and prize the fame of the brave but unsuccessful defenders of Kars as not below those of the more fortunate conquerors of Sebastopol.'"..... "The name of Kars," continued the noble leader of the Conservative party, once aptly called in his impetuous youthful days the Rupert of debate, "will be remembered to the immortal honour of its defenders! a name of everlasting triumph and distinction to the valiant souls, who, amid all the horrors of famine, and hemmed in on all sides by an overpowering force, again and again repulsed their enemy, on whom they on one occasion inflicted a loss almost exceeding the carnage of any battle of modern times, and who, in spite of every discouragement, maintained their high spirit, and achieved victory after victory until finally compelled to yield not to the overwhelming numbers of the foe, but to the still more unconquerable force of sheer famine."[1]

It was but fitting that the representatives of the province, when assembled in parliament, should immediately recognize in a tangible form the valour of an illustrious son, and I well remember—though I was but a mere boy then—the eloquent words with which Attorney-General (Sir

[1] See "Portraits of British Americans" by Fennings Taylor, (Montreal, 1865,) Vol. I., for an admirable sketch of Williams's career. The portrait I give is by Notman, who illustrated this book.

William) Young moved, and the Honourable James W. Johnston supported an address to the lieutenant-governor for the purchase of a sword "as a mark of the high esteem in which his character as a man and a soldier, and especially his heroic courage and constancy in the defence of Kars, were held by the legislature of his native province". "Of all the proofs

GENERAL SIR J. E. W. INGLIS, K.C.B., OF LUCKNOW

From a portrait in Province Building.

which I have received, or shall receive of this too general sentiment in my favour," wrote General Williams when he heard of the action of the Nova Scotian legislature, "the sword voted to me by my fellow-countrymen is the most acceptable to my heart; and when I again come in sight

of the shores of that land, where I first drew my breath, I shall feel that I am a thousand times requited for all I have endured during the eventful years of the last terrible struggle."

At a later time another sword was voted to another gallant Nova Scotian, the grandson of the first colonial bishop of the Church of England, and the son of the third bishop of Nova Scotia, Lieutenant-Colonel, or,—to give him his later titles—Major-General Sir John Eardly Wilmot Inglis, K.C.B., who took a conspicuous part in the dreadful conflict of the Indian mutiny. With rare intrepidity for nearly ninety days he successfully resisted with a small force—a resistance not paralleled in the annals of modern warfare—the murderous attacks that were persistently made upon Lucknow by more than fifty thousand mutineers, and won imperishable fame like Havelock and Lawrence.

Two years later than the payment of this tribute to the hero of Lucknow,[1] the citizens of Halifax assembled by thousands in front of and about the old burying ground on Pleasant street, opposite Government House, to witness the unveiling of a monument which had been erected, in honour of two other brave Nova Scotians, who had fallen in the Crimean war. One of these soldiers was Captain Parker, a grandson of that Benjamin Green, whom I have mentioned in the first part of this monograph as a member of Governor Cornwallis's council. He was one of several distinguished men who have been educated in Horton Academy or in Acadia College as it became at a later time, and after a meritorious career of sixteen years in the British army, met a soldier's death in the final attack on the Redan. His comrade in death and fame, Major Welsford—the grandson of a Loyalist of 1783[1]—was a graduate of old King's, where his name is kept green in the memory of its students by an annual prize founded by that staunch old loyalist, Senator Almon of Halifax. He too found a place among the gallant dead who fell as they were scaling the parapets of the Redan.

> "Sound, sound the clarion, fill the fife!
> To all the sensual world proclaim,
> One crowded hour of glorious life
> Is worth an age without a name."

Williams of Kars may appropriately find a niche among the builders of Nova Scotia since he was closely identified with the closing years of the province as a distinct government, but while Inglis, Parker and Welsford were not directly connected with phases of the internal development of the province where they were born and educated, the qualities they displayed, of heroic endurance and indomitable courage, were qualities which have helped to place the province in its present eminent position

[1] Of Philip Marchington, a Loyalist from New York. See Akins's History of Halifax, p. 97.

among the enlightened communities of this continent, and should be held up to the emulation of all generations of Nova Scotians.[1]

VIII. Shadows of the Past—Conclusion.—Other forms too, rise before me as I peer into the vista of the past and I hear "their distant footsteps echo through the corridors of time":—William Garvie, cut off in the prime of his intellect, a bright and fluent speaker and writer, whose first public contributions were given to *The Halifax Reporter*, of which I was the young editor; Stewart Campbell, once speaker of the assembly, of stately presence and well-rounded sentences; Dr. Crawley, the revered president and practically founder of Acadia College, whose erect, handsome figure was the heritage of a family of nature's gentle-

JUDGE MARSHALL
Aged 89.

men, and whose richly endowed mind was allied to a most lovable disposition; Professor de Mille, called away before the full realization of the literary promise of his early and successful literary efforts, of which the "Dodge Club Abroad" will be still best remembered; eccentric Peter S. Hamilton, who made *The Acadian Recorder* a political force in old times, but died in poverty years after the successful consummation of the federal union of Canada, of which he had been one of the earliest and ablest advocates; the eminent savant Dr. Abraham Gesner, a descendant of a loyalist of 1783, who discovered kerosene oil and methods of extracting valuable oils from coal and other bituminous sub-

[1] The ladies of Halifax also presented to Lady Inglis a copy of the Bible, magnificently bound in dark purple morocco, and decorated with the mayflower, the emblem of Nova Scotia.

stances, but who, despite these economic discoveries, died in poverty; Mr. Justice Dodd, who filled for many years an important place in Nova Scotia politics on the Tory side, a great lover of out-door sports, a loyal supporter of British connection and a firm believer in the federal union and a conscientious occupant of the judicial bench to which his family have given three members, including himself; Reverend George Hill, so conscientious in the utterance of his evangelical views, so well versed in the masterpieces of English literature; Judge Marshall, a veteran of strict temperance views when frequent drinking was too much in vogue, a religious essayist deeply versed in biblical lore, and also a jurist and legal writer of ability in times when such a book as Marshall's "Justice of the Peace" was simply invaluable to illiterate communities, entirely destitute of libraries; Beamish Murdoch, whose stiff antiquated figure in rusty black was long familiar to the residents of Halifax, and illustrative of the indifference to personal appearance of an old student ever poring over musty archives, from which he compiled three octavo volumes, which cannot be dignified by the name of a History of Nova Scotia but, like Prince's Chronology or Holmes's Annals of America, offers abundant materials for the writing of an interesting historical narrative.

And as I revise in print these closing words, another eminent Nova Scotian, Sir William Dawson, whose name is intimately associated with the educational progress and the scientific lore of Canada, must also be placed among those Builders of the Past, whose memories I have feebly attempted to recall in these pages. Sir William Dawson occupied for several years the position of superintendent of education of his native province, and was subsequently chosen principal of McGill University which largely owes its success as a leading scientific institution of this continent to his great energy, administrative ability, and thorough knowledge. He was a voluminous writer on science, but his fame will chiefly rest on his Acadian Geology, which, for lucidity of style and thoroughness of investigation, occupies a high place among the scientific writings of this century.[2]

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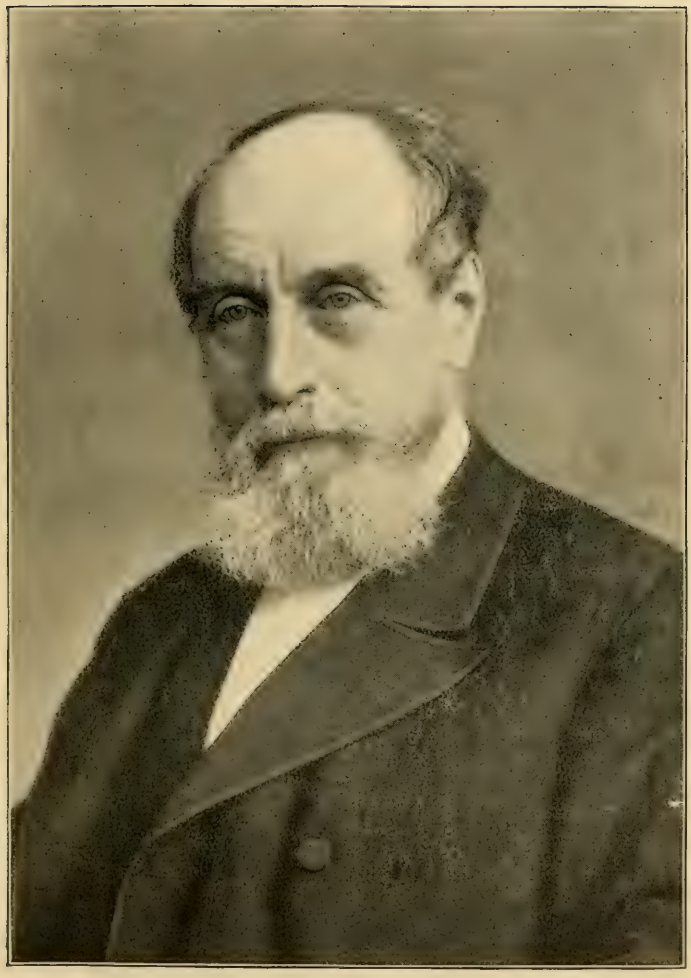
[1] Judge Marshall, who was the first judge appointed to Cape Breton after its annexation to Nova Scotia in 1820, has left behind him a short monograph giving his personal reminiscences of the hardships and difficulties that attended a judicial circuit in those days, "when large portions of my journeys were performed in Indian canoes, in which I have sometimes passed the greater part or the whole of the night, occasionally paddling to lessen chilliness and to afford the poor, tired squaw a partial relief." The old judge—he died in his ninety-fourth year—describes the lawless elements that existed for years during his judicial term in this then sparsely settled island, which is now the resort of tourists attracted by its picturesque scenery and historic associations, and is about to become the headquarters of great iron works in connection with its collieries, whose annual product is very large and steadily on the increase. See "The late Judge Marshall, or the record of an earnest life," by J. G. Bourinot (a grandson on his mother's side), in "Canadian Monthly," 1880; also "Personal Narratives, with Reflections and Remarks," by J G. Marshall, Halifax, N.S., 1866.

[2] His able son, Dr. George M. Dawson, C.M.G., F.R.S., who is also a native of Pictou, is the Director of the Geological Survey of Canada.



SIR J. W. DAWSON, C.M.G., F.R.S.

But I must drop the curtain over the past and close my ears to the many voices that are ever whispering. Where, indeed, do we not hear the voices of Nova Scotians? Do we not hear them in the old halls and sombre corridors of the Province Building, so full of the phantoms of Nova Scotia's public men? Do they not speak to us from the banks of the Annapolis, the Chebogue, the La Hève, the Avon, the Gaspereau, and the Basin of Minas, where the Acadians made the saddest pages of our history? From the Mabou, the Marguerite, the Miré, and other beautiful rivers, which now flow through cultivated meadows and farm lands, we hear the Scotch accents of the humble people who were exiled from the mountains and glens of old Scotia. Do they not speak to us from the storm-swept beaches of the Atlantic coast, where the surf of the ocean ever beats a requiem in memory of the hapless loyal exiles, who wept on the lonely shores to which they fled from their homes in the old rebellious colonies? Does not Inglis call to us from the beleaguered walls of Lucknow,—Williams from the ancient citadel of Kars,—Parker and Welsford from the trenches of the Redan? Wherever the drum beat "following the sun and keeping company with the hours" may play "the martial airs of England," will be heard the voices of Nova Scotians under the folds of the meteor flag to which they have been always true. From every part of the globe we hear the echoes of the calls of our sailors:

"From Bermuda's reefs; from edges
Of sunken ledges
In some far-off, bright Azore;
From Bahama, and the dashing
Silver flashing
Surges of San Salvador.

"From the tumbling surf that buries
The Orkneyan skerries,
Answering the hoarse Hebrides;
And from wrecks of ships, and drifting
Spars, uplifting
On the desolate, rainy seas."

And we may be sure that wherever Nova Scotians may be found—whether toiling under the burning suns of India, or amid the sands or jungles of Africa, or planting orange groves in the sunny land of Florida, or in the fruitful valleys of Southern California, or seeking fame and fortune in far Australian lands, or searching for gold amid the rocks of Klondike, or driving the plough through the rich grasses and flowers of the western prairies, or illustrating the intellect and genius of their people in legislative halls,—they never forget that Acadian land which is associated with the most cherished memories of their boyhood or manhood.

APPENDICES

APPENDIX A.

COMMISSION DU ROY AU SIEUR DE MONTS, POUR L'HABITATION ÉS TERRES DE LA CADIE, CANADA ET AUTRES ENDROITS EN LA NOUVELLE-FRANCE.

From L'Escarbot's "Histoire de la Nouvelle France," Vol. II., p. 408.

HENRY, par la grace de Dieu Roy de France et de Navarre, a nôtre cher et bien amé le sieur de Monts, Gentil-homme ordinaire de notre Chambre, Salut. Comme nôtre plus grand soin et travail soit et ait toujours esté, dupuis nôtre avenement à cette Couronne, de la maintenir et conserver en son ancienne dignité, grandeur et splendeur, d'étendre et amplifier autant que legitimement se peut faire les bornes et limites d'icelle ; Nous estans dés long temps a informez de la situation et condition des païs et territoire de la Cadie ; Meuz sur toutes choses d'vn zele singulier et d'une devote et ferme resolution que nous avons prinse, avec l'aide et assistance de Dieu, autheur, distributeur et protecteur de tous Royaumes et états, de faire convertir, amener et iustruire les peuples qui habitent en cette contrée, de present gens barbares, athées, sans foy ne Religion, au Christianisme, et en la creance et profession de nôtre foy et religion, et les retirer de l'ignorance et infidelité où ils sont ; ayans aussi dés long temps reconeu, sur le rapport des Capitaines de navires, pilotes, marchans et autres qui de longue main ont hanté, frequenté, et trafiqué avec ce qui se trouve de peuples esdits lieux, combien peut estre fructueuse, commode et vtile a nous, a noz états et sujets, la demeure, possession et habitation d'iceux pour le grand et apparent profit qui se retirera par la grande frequentation et habitude que l'on aura avec les peuples qui s'y trouvent et le trafic et commerce qui se pourra par ce moyen seurement traiter et negocier, Novs, pour ces causes, à plein confians de vôtre grande prudence, et en la conoissance et experience que vous avez de la qualité, condition et situation dudit païs de la Cadie pour les diverses navigations, voyages, et frequentations que vous avez faits en ces terres et autres proches et circonvoisines ; nous asseurans que cette nôtre resolution et intention vous estant commise, vous la sçaurez attentivement, diligemment et non moins courageusement at valeureusement executer et conduire à la perfection que nous désirons, Vous avons expressément commis et établi et par ces presentes signées de nôtre main, Vous commettons, ordonnons, faisons, constituons et établissons nôtre Lieutenant general, pour representer nôtre persone aux païs, territoires, côtes et confins de la Cadie, à commencer dés le quarantiéme degré jusques au quarante-sixiéme ; Et en icelle étendue ou partie d'icelle, tant et si avant que faire se pourra, établir, étendre et faire conoître notre nom, puissance et authorité, et à icelle assujettir, submettre et faire obeïr tous les peuples de ladite terre et les circonvoisins ; et par le moyen d'icelles et toutes autres voyes licites, les appeller, faire instruire, provoquer et émouvoir a la connoissance de Dieu et à la lumiere de la Foy et religion Chrétienne, la y établir et en l'exercice et profession d'icelle maintenir, garder et conserver lesdits peuples et tous autres habituez esdits lieux, et en paix, repos et tranquillité y commander tant par mer que par terre ; ordonner, decider, et faire executer tout ce que vous jugerez se devoir et pouvoir faire, pour maintenir, garder et conserver lesdits lieux souz notre puissance et authorité, par les formes, voyes et moyens prescrits par nos ordonnances. Et pour y avoir égard avec vous, commettre, établir et constituer tous Officiers, tant és

APPENDIX A.

KING'S COMMISSION TO DE MONTS FOR THE SETTLEMENT OF THE LANDS IN LA CADIE, CANADA AND OTHER PLACES IN NEW FRANCE.

Translation from Churchill's Voyages, 796-798. Nova Francia.

HENRY, by the Grace of God, King of France and Navarre. To our dear and well beloved the Lord of Monts, one of the ordinary gentlemen of our chamber, greeting.

As our greatest care and labor is, and always hath been, since our coming to this crown, to maintain and conserve it in the ancient dignity, greatness and splendor thereof, to extend and amplify, as much as lawfully may be done, the bounds and limits of the same ; we being of a long time informed of the situation and condition of the lands and territories of La Cadia, moved above all things, with a singular zeal, and devout and constant resolution, which we have taken, with the help and assistance of God, author, distributor and protector of all kingdoms and estates, to cause the people, which do inhabit the country, men (at the present time) barbarous atheists, without faith or religion, to be converted to Christianity, and to the belief and profession of our faith and religion ; and to draw them from ignorance and unbelief wherein they are. Having also of a long time known, by the relation of the sea captains, pilots, merchants and others, who of a long time have haunted, frequented and trafficked with the people that are found in the said places, how fruitful, commodious and profitable may be unto us, to our estates and subjects, dwelling, possession and habitation of these countries, for the great and apparent profit which may be drawn by the greater frequentation and habitude which may be had with the people that are found there, and the traffick and commerce which may be, by that means, safely treated and negotiated. We then, for these causes, fully trusting on your great wisdom, and in the knowledge and experience that you have of the quality, condition and situation of the said country of La Cadia ; for the divers and sundry navigation, voyages and frequentations that you have made in those parts, and others near and bordering upon ; assuring ourselves that this our resolution and intention, being committed unto you, you will attentively, diligently and no less courageously and zealously, execute and bring to such perfection as we desire, have expressly appointed and established you and by these presents, signed by our hands, do commit, ordain, make, constitute and establish you, our Lieutenant-General, for to represent our person in the countries, territories, coasts and confines of La Cadia. To begin from the 40th degree to the 46th and in the same distance, or part of it, as far as may be done, to establish, extend and make to be known, our name, might and authority. And under the same to subject, submit and bring to obedience, all the people of the said lands and borders thereof ; and by the means thereof, all the lawful ways, call, make, instruct, provoke and incite them to a knowledge of God, and to the light of the faith and Christian religion, to establish it there ; and exercise a profession of the same, keep and conserve the said people, and all other inhabitants in the said places, and there to command in peace, rest and tranquillity, as well by sea as by land ; to ordain, decide and cause to be executed, all

affaires de la guerre que de Iustice et police pour la premiere fois, et de là en avant nous les nommer et presenter, pour en estre par nous disposé et donner les lettres, tiltres et provisions tels qu'ils seront necessaires. Et selon les occurrences des affaires, vous-mémes avec l'avis de gens prudens et capables, prescrire souz nôtre bon plaisir, des loix, statuts et ordonnances autant qu'il se pourra conformes aux nôtres, notamment és choses et matieres ausquelles n'est pourveu par icelles ; traiter et contracter à meme effet paix, alliance et confederation, bonne amitié, correspondance et communication avec lesdits peuples et leurs Princes, ou autres ayans pouvoir et commandement sur eux : Entretenir, garder et soigneusement observer, les traitez et alliances dont vous conviendrez avec eux, pourveu qu'ils y satisfacent de leur part. Et a ce defaut, leur faire guerre ouverte pour les contraindre et amener a telle raison que vous jugerez necessaire, pour l'honneur, obeïssance et service de Dieu, et l'établissement, manutention et conservation de nôtre dite authorité parmi eux ; du moins pour hanter et frequenter par vous et tous noz sujets avec eux, en toute asseurance, liberté, frequentation et communication, y negotier et trafliquer amiablement et paisiblement, leur donner et octroyer graces et privileges, charges et honneurs.

Lequel entier pouvoir susdit, Voulons aussi et ordonnons que vous ayez sur tous nosdits sujets et autres qui se transporteront et voudront s'habituer, trafliquer, negocier et resider esdits lieux, tenir, prendre, reserver et vous approprier ce que vous voudrez et verrez vous estre plus commode et propre a votre charge, qualité et vsage desdites terres, en departir telles parts et portions, leur donner et attribuer tels tiltres, honneurs, droits, pouvoirs et facultez que vous verrez besoin estre, selon les qualitez, conditions et merites des personnes du païs ou autres. Sur tout peupler, cultiver et faire habituer lesdites terres le plus promptement, soigneusement et dextrement que le temps, les lieux et commoditez le pourront permettre ; en faire ou faire faire a cette fin la découverture et reconnoissance en l'étenduë des côtes maritimes et autres contrées de la terre ferme que vous ordonnerez et prescrirez en l'espace susdite du quarantiéme degré jusques au quarante-sixiéme, ou autrement tant et si avant qu'il se pourra le long desdites côtes et en la terre ferme ; Faire soigneusement rechercher et reconoitre toutes sortes de mines d'or et d'argent, cuivre et autres metaux et mineraux, les faire fouïller, tirer, purger et affiner, pour estre convertis en vsage, disposer suivant que nous avons prescrit par les Edits et reglements que nous avons faits en ce Royaume du profit et emolument d'icelles, par vous ou ceux que vous aurez établis a cet effet, nous reservans seulement le dixiéme denier de ce qui proviendra de celles d'or, d'argent et cuivre, vous affectant ce que nous pourrions prendre auxdits autre metaux et mineraux, pour aider et soulager aux grandes dépenses que la charge susdite vous pourra apporter. Voulans cependant que pour vôtre seureté et commodité, et de tous ceux de noz sujets qui s'en iront, habituëront at trafliqueront esdites terres, comme generalement de tous autres qui s'y accommoderont souz nôtre puissance et authorité, vous puissiez faire batir et construire vn ou plusieurs forts, places, villes et toutes autres maisons, demeures et habitations, ports, havres, retraites et logements que vous connoitrez propres, vtiles et necessaires a l'execution de ladites entreprise. Etablir garnisons et gens de guerre a la garde d'iceux ; vous aider et prevaloir aux effets susdits des vagabonds, personnes oyseuses et sans aveu, tant és villes qu'aux champs, et des condamnez a banissement perpetuel, ou à trois ans au moins hors nôtre Royaume, pourveu que ce soit par avis et consentement et de l'authorité de nos Officiers. Outre ce que dessus, et qui vous est d'ailleurs prescrit, mandé et ordonné par les commissions et pouvoirs que vous a donnez nostre tres-cher cousin le sieur d'Ampville, Admiral de France, pour ce qui concerne le fait et la charge de l'Admirauté, en l'exploit, expedition et execution des choses susdites, faire generalement pour la conquéte, peuplement, habituation et conservation de ladite terre de la Cadie, et des côtes, territoires circonvoisins et de leurs appartenances et dependances souz nôtre nom et authorité, ce que nous-mémes ferions et faire pourrions si presens en persone y estions, jaçoit que le cas requit mandement plus special que nous ne le vous prescrivons pas cesdites

that which you shall judge fit and necessary to be done to maintain, keep and conserve, the said places under our power and authority, by the forms, ways and means prescribed by our laws. And for to have there a care of the same with you, to appoint, establish and constitute all officers, as well in the affairs of war as for justice and policy, for the first time; and from thenceforward to name and present them unto us; for to be disposed by us, and to give letters, titles and such provisos as shall be necessary; and according to the occurrences of affairs, yourself, with the advice of wise and capable men, to prescribe under our good pleasure laws, statutes and ordinances, conformable, as much as may be possible, until ours, especially in things and matters that are not provided by them; to treat and contract to the same effect, peace, alliance and confederacy, good amity, correspondence and communication with the said people and their princes, or others, having power or command over them, to entertain, keep and carefully to observe the treaties and alliances wherein you shall covenant with them; upon condition that they themselves perform the same of their part. And for want thereof to make open wars against them, to constrain and bring them to such reason as you shall think needful for the honor, obedience and service of God, and the establishment, maintenance and conservation of our said authority amongst them; at least to haunt and frequent by you and all our subjects with them, in all assurance, liberty, frequentation and communication, there to negotiate and traffick lovingly and peaceably; to give and grant unto them favors and privileges, charges and honors. Which entire power aforesaid, we will likewise and ordain, that you have over all our said subjects that will go that voyage with you and inhabit there, traffick, negotiate and remain in the said places, to retain, take, reserve and appropriate unto you what you will and shall see to be most commodious for you and proper for your charge, quality and use of the said lands, to distribute such parts and portions thereof, to give and attribute unto them such titles, honors, rights, powers and faculties as you shall see necessary, according to the qualities, conditions and merits of the persons of the same country, or others; chiefly to populate, to manure and to make the said lands to be inhabited, as speedily, carefully and skilfully as time, places and commodities may permit. To make thereof, or cause to be made to that end, discovery and view along the maritime coasts and other countries of the mainland, which you shall order and prescribe in the aforesaid space of the 40th degree to the 46th degree, or otherwise as much and as far as may be, along the said coast, and in the firm land. To make carefully to be sought and marked all sorts of mines of gold and of silver, copper and other metals and minerals, to make them to be digged, drawn from the earth, purified and refined, for to be converted into use, to dispose according as we have prescribed by edicts and orders, which we have made in this realm of the profit and benefit of them, by you or them whom you shall establish to that effect, reserving unto us only the tenth penny of that which shall issue from them of gold, silver and copper, leaving unto you that which we might take of the other said metals and minerals, for to aid and ease you in the great expenses that the aforesaid charge may bring unto you. Willing in the meanwhile that as well for your security and commodity as for the security and commodity of all our subjects who will go, inhabit and traffick in said lands; as generally of all others that will accommodate themselves there under our power and authority, may cause to be built and framed one or many forts, places, towns and all other houses, dwelling and habitations, ports, havens or retiring places and lodgings as you shall know to be fit, profitable and necessary for the performing of the said enterprize. To establish garrisons and soldiers for the keeping of them. To aid and serve you for the effects aforesaid with the vagrant, idle

presentes, au contenu desquelles, Mandons, ordonnons et tres-expressément enjoignons a tous nos justiciers, officiers et sujets, de se conformer ; Et a vous obeïr e entendre en toutes et chacunes les choses susdites, leurs circonstances et dependances ; Vous donner aussi en l'execution d'icelles tout ayde et confort, mainforte et assistance dont vous aurez besoin et seront par vous requis, le tout a peine de rebellion et desobeïssance ; Et à fin que personne ne pretende cause d'ignorance de cette nôtre intention, et se vueille immiscer en tout ou partie de la charge, dignité et authorité que nous vous donnons par ces presentes, Nous avons de noz certaine science, pleine puissance et authorité Royale, revoqué, supprimé et declaré nuls et de nul effet ci-apres et dés à present, tous autres pouvoirs et Commissions, Lettres et expeditions donnez et delivrez a quelque persone que ce soit, pour decouvrir, conquerir, peupler et habiter en l'étendue susdite desdites terres situées depuis ledit quarantiéme degré jusques au quarante-sixiéme quelles qu'elles soient. Et outre ce, mandons et ordonnons a tous nosdits Officiers de quelque qualité et condition qu'ils soient, que ces presentes, ou *Vidimus* deuëment col-lationné d'icelles par l'vn de noz amez et feaux Conseillers, Notaires et Secretaires, ou autre Notaire Royal, ils facent à vôtre requête, poursuite et diligence, ou de noz Procureurs, lire, publier et registrer és registres de leurs jurisdictions, pouvoirs et détrois, cessans en tant qu'a eux appartiendra, tous troubles et empéchemens à ce contraires. Car tel est nôtre plaisir. Donné à Fontainebleau le huitiéme jour de Novembre, l'an de grace mil six cens trois, et de nôtre regne le quinziéme. Signé, HENRY. Et plus bas : Par le Roy Potier. Et scellé sur simple queuë de cire jaune.

persons and masterless, as well out of towns as of the country; and with them that be condemned to perpetual banishment, or for three years at least out of our realm provided always it be done by the advice, consent and authority of our officers. Over and besides that which is above mentioned. (And that which is moreover prescribed, commanded and ordained unto you by the conditions and powers which our most dear cousin the Lord of Ampville, Admiral of France, hath given unto you for that which concerneth the affairs and charge of the admiralty, in the exploits, expeditions and executing of the things above said), to do generally whatsoever may make for the conquest, peopling, inhabiting and preservation of the said land of La Cadia; and of the coasts, territories, adjoining and of their appurtenances and dependencies, under our name and authority, whatsoever ourselves would and might do if we were there present in person, although that the case should require a more special order than we prescribe unto you by these presents: to the contents whereof we command, ordain and most expressly do enjoin all our justices, officers and subjects to conform themselves; and to obey and give attention unto you in all and every the things aforesaid, their circumstances and dependencies. Also to give unto you in the executing of them, all such aid and comfort, help and assistance as you shall have need of, and whereof they shall be by you required; and this upon pain of disobedience and rebellion. And, to the end, nobody may pretend cause of ignorance of this our intention and to busy himself in all or in any part of the charge, dignity and authority which we give unto you by these presents; we have of our certain knowledge, full power and regal authority, revoked, suppressed and declared void and of none effect hereafter, and from this present time all other powers and commissions, letters and expeditions given and delivered to any person soever, for to discover, people and inhabit in the aforesaid extension of the said lands, situated from the said 40th degree to the 46th, whatsoever they be. And, furthermore, we command and ordain all our said officers of what quality and condition soever they be, that after these presents, or the duplicate of them, shall be duly examined by one of our beloved and trusty counsellors, notaries and secretaries, or other notary-royal, they do upon your request, demand and suit, or upon the suit of any of our attornies, cause the same to be read, published and recorded in the records of their jurisdiction, powers and precincts, seeking, as much as shall appertain unto them to quiet and appease all troubles and hindrances which may contradict the same; for such is our pleasure.

Given at Fontainebleau, the eighth day of November, in the year of our Lord 1603, and of our reign the 15th.

Signed "HENRY," and underneath "By the King, POTIER," and sealed upon single label with yellow wax.

APPENDIX B.

CARTA DOMINI WILLELMI ALEXANDRI EQUITIS DOMINII ET BARONIAE NOVAE SCOTIAE IN AMERICA, 10 SEPTEMBRIS 1621.

From "Royal Letters, Charters and Tracts," published by the Bannatyne Club, Edinburgh, 1867.

JACOBUS Dei gratia Magnae Britanniae Franciae et Hiberniae Rex &c. Fideique Defensor Omnibus probis hominibus totius terrae suae clericis at laicis salutem. SCIATIS nos semper ad quamlibet quae ad decus et emolumentum regni nostri Scotiae spectaret occasionem amplectendam fuisse intentos nullamque aut faciliorem aut magis innoxiam acquisitionem censere quam quae in exteris et incultis regnis ubi vitae et victui suppetunt commoda novis deducendis coloniis facta sit; praesertim si vel ipsa regna cultoribus prius vacua vel ab infidelibus quos ad Christianam converti fidem ad Dei gloriam interest plurimum insessa fuerunt; sed cum at alia nonnulla regna et haec non ita pridem nostra Anglia laudabiliter sua nomina novis terris acquisitis et a se subactis indiderunt quam numerosa et frequens Divino beneficio haec gens hac tempestate sit nobiscum reputantes quamque honesto aliquo et utili culto eam studiose exerceri ne in deteriora ex ignavia et otio prolabatur expediat plerosque in novam deducendos regionem quam coloniis compleant operae pretium duximus qui et animi promptitudine et alacritate corporumque robore et viribus quibuscunque difficultatibus si qui alii mortalium uspiam se audeant opponere hunc conatum huic regno maxime idoneum inde arbitramur quod virorum tantummodo et mulierum jumentorum et frumenti non etiam pecuniae transvectionem postulat neque incommodam ex ipsius regni mercibus retributionem hoc tempore cum negotiatio adeo imminuta sit possit reponere hisce de causis sicuti et propter bonum fidele et gratum dilecti nostri consiliarii Domini Willelmi Alexandri equitis servitium nobis praestitum et praestandum qui propriis impensis ex nostratibus primus externam hanc coloniam ducendam conatus sit diversasque terras infra-designatis limitibus circumscriptas incolendas expetiverit NOS IGITUR ex regali nostra ad Christianam religionem propagandam et ad opulentiam prosperitatem pacemque naturalium nostrorum subditorum dicti regni nostri Scotiae acquirendam cura sicuti alii principes extranei in talibus casibus hactenus fecerunt cum avisamento et consensu praedilecti nostri consanguinei et consiliarii Joannis Comitis de Mar Domini Erskin et Gareoch summi nostri thesaurarii computorum rotulatoris collectoris ac thesaurarii novarum nostrarum augmentationum hujus regni nostri Scotiae ac reliquorum dominorum nostrorum commissionariorum ejusdem regni nostri Dedimus concessimus et disposuimus tenoreque praesentis cartae nostrae damus concedimus et disponimus praefato Domino Willelmo Alexander haeredibus suis vel assignatis quibuscunque haereditarie omnes et singulas terras continentis ac insulas situatas et jacentes in America intra caput seu promontorium communiter Cap de Sable appellatum jacens prope latitudinem quadraginta trium graduum aut eo circa ab equinoctiali linea versus septentrionem a quo promontorio versus littus maris tendentes ad occidentem ad stationem Sanctae Mariae navium vulgo *Sanctmareis Bay* et deinceps versus septentrionem per directam lineam introitum sive ostium magnae illius stationis navium trajicientes quae excurrit in terrae orientalem plagam inter regiones Suriquorum et Etecheminorum vulgo *Suriquois* et *Etechemines* ad fluvium vulgo nomine Sanctae Crucis appellatum et ad scaturiginem remotis-

APPENDIX B.

CHARTER IN FAVOUR OF SIR WILLIAM ALEXANDER, KNIGHT, OF THE LORDSHIP AND BARONY OF NEW SCOTLAND IN AMERICA.

(Translated by the Rev. Carlos Slafter, A.M., of Dedham).

JAMES, by the grace of God, King of Great Britain, France and Ireland, and Defender of the Faith, to all good men, clerical and lay, of his entire realm,—greeting.

Know ye, that we have always been eager to embrace every opportunity to promote the honour and wealth of our Kingdom of Scotland, and think that no gain is easier or more safe, than what is made by planting new colonies in foreign and uncultivated regions where the means of living and food abound; especially, if these places were before without inhabitants or were settled by infidels whose conversion to the Christian faith most highly concerns the glory of God.

But whilst many other kingdoms, and not very long ago, our own England, to their praise, have given their names to new lands, which they have acquired and subdued; we, thinking how populous and crowded this land now is, by Divine Favour, and how expedient it is that it should be carefully exercised in some honourable and useful discipline, lest it deteriorate through sloth and inaction, have judged it important that many should be led forth into new territory, which they may fill with colonies; and so we think, this undertaking most fit for this Kingdom, both on account of its promptness and activity of its spirit and the strength and endurance of its men against any difficulties, if any other men anywhere dare to set themselves in opposition; and as it demands the transportation only of men and women, stock and grain, and not of money, and cannot repay at this time, when business is so depressed, a troublesome expenditure of the treasures of this realm; for these reasons, as well as on account of the good, faithful and acceptable service of our beloved Counsellor, Sir William Alexander, Knight, to us rendered and to be rendered, who first of our subjects, at his own expense attempted to plant this foreign colony and selected for plantation the divers lands bounded by the limits hereafter designated:—

We, therefore, from our Sovereign anxiety to propagate the Christian faith, and to secure the wealth, prosperity and peace of the native subjects of our said Kingdom of Scotland, as other foreign princes in such cases already have done, with the advice and consent of our well-beloved cousin and counsellor, John, Earl of Mar, Lord Erskine and Gareoch, &c., our High Treasurer, Comptroller, Collector and Treasurer of our new revenues of this our Kingdom of Scotland and of the other Lords Commissioners of our same Kingdom have given, granted and conveyed, and, by the tenor of our present charter, do give, grant and convey to the aforesaid Sir William Alexander, his heirs or assigns, hereditarily, all and single, the lands of the Continent. and islands situated and lying in America, within the head or promontory

simam sive fontem ex occidentali parte ejusdem qui se primum praedicto fluvio immiscet unde per imaginariam directam lineam quae pergere per terram seu currere versus septentrionem concipietur ad proximam navium stationem fluvium vel scaturiginem in magno fluvio de Cannada sese exonerantem et ab eo pergendo versus orientem per maris oras littorales ejusdem fluvii de Canada ad fluvium stationem navium portum aut littus communiter nomine de Gathepe vel Gaspie notum et appellatum et deinceps versus euronotum ad insulas Bacalaos vel Cap Britton vocatas relinquendo easdem insulas a dextra et voraginem dicti magni fluvii de Canada sive magnae stationis navium et terras de Newfundland cum insulis ad easdem terras pertinentibus a sinistra et deinceps ad caput sive promontorium de Cap Britton praedictum jacens prope latitudinem quadraginta quinque graduum aut eo circa et a dicto promontorio de Cap Britton versus meridiem et occidentem ad praedictum Cap Sable ubi incepit perambulatio includendo et comprehendendo intra dictas maris oras littorales ac earum circumferentias a mari ad mare omnes terras continentis cum fluminibus torrentibus sinubus littoribus insulis aut maribus jacentibus prope aut infra sex leucas ad aliquam earundem partem ex occidentali boreali vel orientali partibus orarum littoralium et praecinctuum earundem et ab euronoto (ubi jacet Cap Britton) et ex australi parte ejusdem (ubi est Cap de Sable) omnia maria ac insulas versus meridiem intra quadraginta leucas dictarum orarum littoralium earundem magnam insulam vulgariter appellatam Yle de Sable vel Sablon includendo jacentem versus Carban vulgo *south-south-eist* circa triginta leucas a dicto Cap Britton in mari et existentem in latitudine quadraginta quatuor graduum aut eo circa Quaequidem terrae praedictae omni tempore affuturo nomine NOVAE SCOTIAE IN AMERICA gaudebunt quas etiam praefatus Dominus Willelmus in partes et portiones sicut ei visum fuerit dividet iisdemque nomina pro beneplacito imponet Unacum omnibus fodinis tam regalibus auri et argenti quam aliis fodinis ferri plumbi cupri stanni aeris ac aliis mineralibus quibuscunque cum potestate effodiendi et de terra effodere causandi purificandi et repurgandi easdem et convertendi ac utendi suo proprio usui aut aliis usibus quibuscunque sicuti dicto Domino Willelmo Alexander haeredibus suis vel assignatis aut iis quos suo loco in dictis terris stabilire ipsum contigerit visum fuerit (reservando solummodo nobis et successoribus nostris decimam partem metalli vulgo *oore* auri et argenti quod ex terra in posterum effodietur aut lucrabitur) Relinquendo dicto Domino Willelmo suisque praedictis quodcunque ex aliis metallis cupri chalibis ferri stanni plumbi aut aliorum mineralium nos vel successores nostri quovismodo exigere possumus ut eo facilius magnos sumptus in extrahendis præfatis metallis tollerare possit Unacum margaritis vulgo *pearle* ac lapidibus praetiosis quibuscunque aliis lapicidinis silvis virgultis mossis marresiis lacubus aquis piscationibus tam in aqua salsa quam recenti tam regalium piscium quam aliorum venatione aucupatione commoditatibus et haereditamentis quibuscunque Unacum plenaria potestate privilegio et jurisdictione liberae regalitatis capellae et cancellariae imperpetuum cumque donatione et patronatus jure ecclesiarum capellaniarum et beneficiorum cum tenentibus tenandriis et liberetenentium servitiis earundem una cum officiis justiciariae et admiralitatis respective infra omnes bondas respective supra mentionatas Una etiam cum potestate civitates liberos burgos liberos portus villas et burgos baroniae erigendi ac fora et nundinas infra bondas dictarum terrarum constituendi curias justiciariae et admiralitatis infra limites dictarum terrarum fluviorum portuum et marium tenendi una etiam cum potestate imponendi levandi et recipiendi omnia tolonia custumas anchoragia aliasque dictorum burgorum fororum nundinarum ac liberorum portuum devorias et eisdem possidendi et gaudendi adeo libere in omnibus respectibus sicuti quivis baro major aut minor in hoc regno notro Scotiae gavisus est aut gaudere poterit quovis tempore praeterito vel futuro cum omnibus aliis praerogativis privilegiis immunitatibus dignitatibus casualitatibus profiteis et devoriis ad dictas terras maria et bondas earundem spectantibus et pertinentibus et quae nos ipsi dare vel concedere possumus adeo libera et ampla forma sicuti nos aut aliquis nostrorum nobilium

commonly called Cape of Sable, lying near the forty-third degree of north latitude, or thereabouts; from this Cape stretching along the shores of the sea, westward to the roadstead of St. Mary, commonly called Saint Mary's Bay, and thence northward by a straight line, crossing the entrance, or mouth, of that great roadstead which runs towards the eastern part of the land between the countries of the Suriqui and Etchimini, commonly called Suriquois and Etechemines, to the river generally known by the name of St. Croix, and to the remotest springs, or source, from the western side of the same, which empty into the first mentioned river; thence by an imaginary straight line which is conceived to extend through the land, or run northward to the nearest bay, river or stream emptying into the great river of Canada; and going from that eastward along the low shores of the same river of Canada, to the river, harbour, port or shore commonly known and called by the name of Gathepe or Gaspie, and thence south-southeast to the isles called Bacalaos, or Cape Breton, leaving the said isles on the right, and the mouth of the said great river of Canada, or large bay, and the territory of Newfoundland with the islands belonging to the same lands, on the left; thence to the headland or point of Cape Breton aforesaid, lying near latitude 45 degrees, or thereabouts; and from the said point of Cape Breton toward the south and west to the above-mentioned Cape Sable, where the boundary began; including and containing within the said coasts and their circumference, from sea to sea, all lands of the continent with the rivers, falls, bays, shores, islands, or seas, lying near or within six leagues on any side of the same on the west, north or east sides of the same coasts and bounds and on the south-southeast (where Cape Breton lies) and on the south side of the same (where Cape Sable is) all seas and islands southward within forty degrees of said sea-shore, thereby including the large island commonly called Isle de Sable, or Sablon, lying towards Carban, in common speech, south-southeast, about thirty leagues from the said Cape Breton seaward, and being in latitude 44 degrees, or thereabouts.

The above-described lands shall in all future time bear the name of New Scotland in America, and also the aforesaid Sir William shall divide it into parts and portions as seemeth best to him, and shall give names to the same at his pleasure.

With all mines, both the royal ones of gold and silver, and others of iron, lead, copper, tin, brass and other minerals, with the power of mining and causing to dig them from the earth, and of purifying and refining the same, and converting to his own use, or that of others as shall seem best to the said Sir William, his heirs or assigns, or to whomsoever it shall have pleased him to establish in said lands, reserving only to us and our successors a tenth part of the metal vulgarly known as ore of gold and silver which shall be hereafter dug or obtained from the land; leaving the said Sir William and his aforesaids whatever of other metals of copper, steel, iron, tin, lead or other minerals, we or our successors may be able in any way to obtain from the earth, in order that thereby they may the more easily bear the large expense of reducing the aforesaid metals; together with margarite, termed pearl, and any other precious stones, quarries, forests, thickets, mosses, marshes, lakes, waters, fisheries, in both salt and fresh water, and of both royal and other fish, hunting, hawking, and anything that may be sold or inherited; with full power, privilege and jurisdiction of free royalty, chapelry, and chancery for ever; with the gift and right of patronage of churches, chapels and benefices; with tenants, tenancies and the services of those holding the same freely; together with the offices of justiciary and admiralty within all the bounds respectively mentioned above; also with power of setting up states, free towns, free ports, villages and barony towns, and of establishing markets and fairs within the bounds of said lands; of holding courts of Justice and admiralty within the

progenitorum aliquas cartas patentes literas infeofamenta donationes aut diplomata concesserunt cuivis subdito nostro cujuscunque qualitatis aut gradus cuivis societati aut communitati tales colonias in quascunque partes extraneas deducenti aut terras extraneas investiganti in adeo libera at ampla forma sicuti eadem in hac praesenti carta nostra insereretur Facimus etiam constituimus et ordinamus dictum Dominum Willelmum Alexander haeredes suos aut assignatos vel eorum deputatos nostros HAEREDITARIOS LOCUMTENENTES GENERALES ad representandum nostram personam regalem tam per mare quam per terram in regionibus maris oris ac finibus praedictis in petendo dictas terras quamdiu illic manserit ac redeundo ab eisdem ad gubernandum regendum et puniendum omnes nostros subditos quos ad dictas terras ire aut easdem inhabitare contigerit aut qui negotiationem cum eisdem suscipient vel in eisdem locis remanebunt ac eisdem ignoscendum et ad stabiliendum tales leges statuta constitutiones directiones instructiones formas gubernandi et magistratuum ceremonias infra dictas bondas sicut ipsi Domino Willelmo Alexander aut ejus praedictis ad gubernationem dictae regionis et ejusdem incolarum in omnibus causis tam criminalibus quam civilibus visum fuerit et easdem leges regimina formas et ceremonias alterandum et mutandum quoties sibi vel suis praedictis pro bono et commodo dictae regionis placuerit ita ut dictae leges tam legibus hujus regni nostri Scotiae quam fieri possunt sint concordes Volumus etiam ut in casu rebellionis aut seditionis legibus utatur militaribus adversus delinquentes vel imperio ipsius sese subtrahentes adeo libere sicuti aliquis locumtenens cujusvis regni nostri vel dominii virtute officii locumtenentis habent vel habere possunt excludendo omnes alios officiarios hujus regni nostri Scotiae terrestres vel maritimos qui in posterum aliquid jurisclamei commoditatis authoritatis aut interesse in et ad dictas terras aut provinciam praedictam vel aliquam inibi jurisdictionem virtute alicujus praecedentis dispositionis aut diplomatis praetendere possunt Et ut viris honesto loco natis sese ad expeditionem istam subeundam et ad coloniae plantationem in dictis terris addatur animus nos pro nobis nostrisque haeredibus et successoribus cum avisamento et consensu praedicto virtute praesentis cartae nostrae damus et concedimus liberam et plenariam potestatem praefato Domino Willelmo Alexander suisque praedictis conferendi favores privilegia munia et honores in demerentes cum plenaria potestate eisdem aut eorum alicui quos cum ipso Domino Willelmo suisque praedictis pactiones vel contractus facere pro eisdem terris contigerit sub subscriptione sua vel suorum praedictorum et sigillo infra mentionato aliquam portionem vel portiones dictarum terrarum portuum navium stationum fluviorum aut praemissorum alicujus partis disponendi et extradonandi erigendi etiam omnium generum machinas artes facultates vel scientias aut easdem exercendi in toto vel in parte sicuti ei pro bono ipsorum visum fuerit Dandi etiam concedendi et attribuendi talia officia titulos jura et potestates constituendi et designandi tales capitaneos officiarios balivos gubernatores clericos omnesque alios regalitatis baroniae et burgi officiarios aliosque ministros pro administratione justiciae infra bondas dictarum terrarum aut in via dum terras istas petunt per mare et ab eisdem redeunt sicuti ei necessarium videbitur secundum qualitates conditiones et personarum merita quos in aliqua coloniarum dictae provinciae aut aliqua ejusdem parte habitare contigerit aut qui ipsorum bona vel fortunas pro commodo et incremento ejusdem periculo committent et eosdem ab officio removendi alterandi et mutandi prout ei suisque praescriptis expediens videbitur Et cum hujusmodi conatus non sine magno labore et sumptibus fiunt magnamque pecuniae largitionem requirant adeo ut privati cujusvis fortunas excedant et multorum suppetiis indigeant ob quam causam praefatus Dominus Willelmus Alexander suique praescripti cum diversis nostris subditis aliisque pro particularibus periclitationibus et susceptionibus ibidem qui forte cum eo suisque haeredibus assignatis vel deputatis pro terris piscationibus mercimoniis aut populi transportatione cum ipsorum pecoribus rebus et bonis versus dictam Novam Scotiam contractus inibunt volumus ut quicunque tales contractus cum dicto Domino Willelmo suisque praescriptis sub ipsorum subscrip-

limits of such lands, rivers, ports and seas; also with the power of improving, levying and receiving all tolls, customs, anchor-dues and other revenues of the said towns, marts, fairs and the free ports; and of owning and using the same as freely in all respects as any greater or lesser Baron in our Kingdom of Scotland has enjoyed in any past, or could enjoy in any future time; with all other prerogatives, privileges, immunities, dignities, perquisites, profits, and dues concerning and belonging to said lands, seas, and the boundaries thereof, which we ourselves can give and grant, as freely and in as ample form as we or any of our noble ancestors granted any charters, letters patent, enfeoffments, gifts, or commissions to any subjects of whatever rank or character, or to any society or company leading out such colonies into any foreign parts, or searching out foreign land in as free and ample form as if the same were included in this present charter; also we make, constitute and ordain the said Sir William Alexander, his heirs and assigns, or their deputies, our hereditary Lieutenants-General, for representing our royal person, both by sea and by land, in the regions of the sea, and on the coasts, and in the bounds aforesaid, both in seeking said lands and remaining there and returning from the same; to govern, rule, punish and acquit all our subjects who may chance to visit or inhabit the same, or who shall do business with the same, or shall tarry in the said places; also, to pardon the same, and to establish such laws, statutes, constitutions, orders, instructions, forms of governing and ceremonies of magistrates in said bounds, as shall seem fit to Sir William Alexander himself, or his aforesaids, for the government of the said region, or of the inhabitants of the same, in all causes, both criminal and civil; also, of changing and altering the said laws, rules, forms and ceremonies, as often as he or his aforesaids shall please for the good and convenience of said region; so that said laws may be as consistent as possible with those of our realm of Scotland. We also will that, in case of rebellion or sedition, he may use martial law against delinquents or such as withdraw themselves from his power, as freely as any lieutenant whatever of our realm or dominion, by virtue of the office of lieutenant, has, or can have, the power to use, by excluding all other officers of this our Scottish realm, on land or sea, who hereafter can pretend to any claim, property, authority or interest in or to said lands or province aforesaid, or any jurisdiction therein by virtue of any prior disposal of patents; and, that a motive may be offered to noblemen for joining this expedition and planting a colony in said lands, we, for ourselves and our heirs and successors, with the advice and consent aforesaid, by virtue of our present charter, do give and grant free and full power to the aforesaid Sir William Alexander and his aforesaids, to confer favours, privileges, gifts and honours to those who deserve them, with full power to the same, or any one of them, who may have made bargains or contracts with Sir William, or his deputies for the said lands, under his signature, or that of his deputies, and under the seal hereinafter described, to dispose of and convey any part or parcel of said lands, ports, harbours, rivers or of any part of the premises; also, of erecting machines of all sorts, introducing arts or sciences or practising the same, in whole or in part, as he shall judge to be to their advantage; also, to give, grant and bestow such offices, titles, rights and powers, make and appoint such captains, officers, bailiffs, governors, clerks and all other officers, clerks and ministers of royalty, barony and town, for the execution of justice within the bounds of said lands, or on the way to these lands by sea, and returning from the same, as shall seem necessary to him, according to the qualities, conditions and deserts of the persons who may happen to dwell in any of the colonies of said province, or in any part of the same, or who may risk their goods and fortunes for the advantages and increase of the same; also, of removing the same persons from office, transferring or changing them, as far as it shall seem expedient to him and his aforesaids.

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tionibus et sigillis expedient limitando assignando et affigendo diem et locum pro personarum bonorum et rerum ad navem deliberatione sub pena et forisfactura cujusdam monetae summae et eosdem contractus non perficient sed ipsum frustrabunt et in itinere designato ei nocebunt quod non solum dicto domino Willelmo suisque praedictis poterit esse praejudicio et nocumento verum etiam nostrae tam laudabili intentioni obstabit et detrimentum inferet tunc licitum erit praefato Domino Willelmo suisque praedictis vel eorum deputatis et conservatoribus inframentionatis in eo casu sibi suisve praedictis quos ad hunc effectum substituet omnes tales summas monetae bona et res forisfactas per talium contractuum violationem assumere Quod ut facilius fiat et legum prolixitas evitetur dedimus et concessimus tenoreque praesentis cartae nostrae damus et concedimus plenariam licentiam libertatem et potestatem dicto Domino Willelmo suisque haeredibus et assignatis praedictis eligendi nominandi assignandi ac ordinandi libertatum et privilegiorum per praesentem nostram cartam sibi suisque praedictis concessorum conservatorem qui expeditae executioni leges et statuta per ipsum suosque praedictos facta secundum potestatem ei suisque praedictis per dictam nostram cartam concessam demandabit volumusque et ordinamus potestatem dicti conservatoris in actionibus et causis ad personas versus dictam plantationem contrahentes spectantibus absolutam esse sine ulla appellatione aut procrastinatione quacunque quiquidem conservator possidebit et gaudebit omnia privilegia immunitates libertates et dignitates quascunque quae quivis conservator Scoticorum privilegiorum apud extraneos vel in Gallia Flandria aut alibi hactenus possiderunt aut gavisi sunt quovis tempore praeterito Et licet omnes tales contractus inter dictum Dominum Willelmum suosque praedictos et praedictos periclitatores per periclitationem et transportationem populorum cum ipsorum bonis et rebus ad statutum diem perficientur et ipsi cum suis omnibus pecoribus et bonis ad littus illius provinciae animo coloniam ducendi et remanendi appellent et nihilominus postea vel omnino provinciam Novae Scotiae et ejusdem confinia sine licentia dicti Domini Willelmi ejusque praedictorum vel eorum deputatorum vel societatem et coloniam praedictam ubi primum combinati et conjuncti fuerant derelinquent et ad agrestes indigenas in locis remotis et desertis ad habitandum sese conferent quod tunc amittent et forisfacient omnes terras prius iis concessas omnia etiam bona infra omnes praedictas bondas et licitum erit praedicto Domino Willelmo suisque praedictis eadem fisco applicare et easdem terras recognoscere eademque omnia ad ipsos vel eorum aliquem quovismodo spectantia possidere et suo peculiari usui suorumque praedictorum convertere Et ut omnes dilecti nostri subditi tam regnorum nostrorum et dominiorum quam alii extranei quos ad dictas terras aut aliquam earundem partem ad mercimonia contrahenda navigare contigerit melius sciant et obedientes sint potestati et authoritati per nos in praedictum fidelem nostrum consiliarum Dominum Willelmum Alexander suosque praedictos collatae in omnibus talibus commissionibus warrantis [et] contractibus quos quovis tempore futuro faciet concedet et constituet pro decentiori et validiori constitutione officiariorum pro gubernatione dictae coloniae concessione terrarum et executione justiciae dictos inhabitantes periclitantes deputatos factores vel assignatos tangentibus in aliqua dictarum terrarum parte vel in navigatione ad easdem terras nos cum avisamento et consensu praedicto ordinamus quod dictus Dominus Willelmus Alexander suique praedicti unum commune sigillum habebunt ad officium locumtenentis justiciariae et admiralitatis spectans quod per dictum Dominum Willelmum Alexander suosque praedictos vel per deputatos suos omni tempore affuturo custodietur in cujus uno latere nostra insignia insculpentur cum his verbis in ejusdem circulo et margine SIGILLUM REGIS SCOTIAE ANGLIAE FRANCIAE ET HYBERNIAE et in altero latere imago nostra nostrorumque successorum cum his verbis (PRO NOVAE SCOTIAE LOCUMTENENTE) cujus justum exemplar in manibus ac custodia dicti conservatoris remanebit quo prout occasio requiret in officio suo utetur Et cum maxime necessarium sit ut omnes dilecti nostri subditi quotquot dictam provinciam Novae Scotiae vel ejus confinia incolent in timore Omnipotentis

And, since attempts of this kind are not made without great labour and expense, and demand a large outlay of money, so that they exceed the means of any private man, and on this account the said Sir William Alexander and his aforesaids may need supplies of many kinds, with many of our subjects and other men for special enterprises and ventures therein, who may form contracts with him, his heirs, assigns or deputies for lands, fisheries, trade, or the transportation of people and their flocks, goods and effects to the said New Scotland, we will that whoever shall make such contracts with the said Sir William and his aforesaids under their names and seals, by limiting, assigning and fixing the day and place for the delivery of persons, goods and effects on shipboard, under forfeiture of a certain sum of money, and shall not perform the same contracts, but shall thwart and injure him in the proposed voyage, which thing will not only oppose and harm the said Sir William and his aforesaids, but also prejudice and damage our so laudable intention; then it shall be lawful to the said Sir William and his aforesaids, or their deputies and conservators hereinafter mentioned, in such case to seize for himself, or his deputies whom he may appoint for this purpose, all such sums of money, goods and effects forfeited by the violation of these contracts. And that this may be more easily done, and the delay of the law be avoided, we have given and granted, and by the tenor of these presents do give and grant full power to the Lords of our Council, that they may reduce to order and punish the violators of such contracts and agreements made for the transportation of persons. And although all such contracts between the said Sir William and his aforesaids and the aforesaid adventurers shall be carried out in the risk and the conveyance of people with their goods and effects, at the set time; and they with all their cattle and goods arrive at the shore of that province with the intention of colonizing and abiding there; and yet, afterwards, shall leave the province of New Scotland altogether, and the confines of the same, without the consent of the said Sir William and his aforesaids or their deputies, or the society and colony aforesaid, where first they had been collected and joined together; and shall go away to the uncivilized natives, to live in remote and desert places; then they shall lose and forfeit all the lands previously granted them; also all their goods within the aforesaid bounds; and it shall be lawful for the said Sir William and his aforesaids to confiscate the same, and to reclaim the same lands, and to seize and convert and apply to his own use and that of his aforesaids all the same belonging to them, or any one of them.

And that all our beloved subjects, as well of our kingdoms and dominions, so also others of foreign birth who may sail to the said lands, or any part of the same, for obtaining merchandise, may the better know and obey the power and authority given by us to the aforesaid Sir William Alexander, our faithful counsellor, and his deputies, in all such commissions, warrants and contracts as he shall at any time make, grant and establish for the more fit and safe arrangement of offices, to govern said colony, grant lands and execute justice in respect to the said inhabitants, adventurers, deputies, factors or assigns, in any part of said lands, or in failing to the same, we, with the advice and consent aforesaid, do order that the said Sir William Alexander and his aforesaids shall have one common seal, pertaining to the office of Lieutenant of Justiciary and Admiralty, which by the said Sir William Alexander and his aforesaids or their deputies, in all time to come, shall be safely kept; on one side of it our arms shall be engraved, with these words on the circle and margin thereof:—"Sigillum Regis Scotiae Angliae Franciae et Hyberniae," and on the other side our image, or that of our successors, with these words:—"Pro Novae Scotiae Locum Tenente," and a true copy of it shall be kept in the hands and care of the conservator of the privileges of New Scotland, and this he may use in his office as

Dei et vero ejus cultu simul vivant omni conamine nitentes Christianam religionem ibi stabilire pacem etiam et quietem cum nativis incolis et agrestibus aboriginibus earum terrarum colere (unde ipsi et eorum quilibet mercimonia ibi exercentes tuti cum oblectamento ea quae magno cum labore et periculo acquisiverunt quiete possidere possint) nos pro nobis nostrisque successoribus volumus nobisque visum est per praesentis cartae nostrae tenorem dare et concedere dicto Domino Willelmo Alexander suisque praedictis et eorum deputatis vel aliquibus aliis gubernatoribus officiariis et ministris quos ipsi constituent liberam et absolutam potestatem tractandi et pacem affinitatem amicitiam et mutua colloquia operam et communicationem cum agrestibus illis aboriginibus et eorum principibus vel quibuscunque aliis regimen et potestatem in ipsos habentibus contrahendi observandi et alendi tales affinitates et colloquia quae ipsi vel sui predicti cum iis contrahent modo feodera illa ex adversa parte per ipsos silvestres fideliter observentur quod nisi fiat arma contra ipsos sumendi quibus redigi possunt in ordinem sicuti dicto Willelmo suisque praedictis et deputatis pro honore obedientia et Dei servitio ac stabilimento defensione et conservatione authoritatis nostrae inter ipsos expediens videbitur Cum potestate etiam praedicto Domino Willelmo Alexander suisque praedictis per ipsos vel eorum deputatos substitutos vel assignatos pro ipsorum defensione [et] tutela omni tempore et omnibus justis occasionibus in posterum aggrediendi ex inopinato invadendi expellendi et armis repellendi tam per mare quam per terram omnibus modis omnes et singulos qui sine speciali licentia dicti Domini Willelmi suorumque praedictorum terras inhabitare aut mercaturam facere in dicta Novae Scotiae provincia aut quavis ejusdem parte conabuntur et similiter omnes alios quoscunque qui aliquid damni detrimenti destructionis laesionis vel invasionis contra provinciam illam aut ejusdem incolas inferre praesumunt quod ut facilius fiat licitum erit dicto Domino Willelmo suisque praedictis eorum deputatis factoribus et assignatis contributiones a periclitantibus et incolis ejusdem levare in unum cogere per proclamationes vel quovis alio ordine talibus temporibus sicuti dicto Domino Willelmo suisque praedictis expediens videbitur omnes nostros subditos infra dictos limites dictae provinciae Novae Scotiae inhabitantes et mercimonia ibidem exercentes convocare pro meliori exercituum necessariorum supplemento et populi et plantationis dictarum terrarum augmentatione et incremento Cum plenaria potestate privilegio et libertate dicto Domino Willelmo Alexander suisque praedictis per ipsos vel eorum substitutos per quaevis maria sub nostris insigniis et vexillis navigandi cum tot navibus tanti oneris et tam bene munitione viris et victualibus instructis sicuti possunt parare quovis tempore et quoties iis videbitur expediens ac omnes cujuscunque qualitatis et gradus personas subditi nostri[1] existentes aut qui imperio nostro sese subdere ad iter illud suscipiendum voluerint cum ipsorum jumentis equis bobus ovibus bonis et rebus omnibus munitionibus machinis majoribus armis et instrumentis militaribus quotquot voluerint aliisque commoditatibus et rebus necessariis pro usu ejusdem coloniae mutuo commercio cum nativis inhabitantibus earum provinciarum aut aliis qui cum ipsis plantatoribus mercimonia contrahent transportandi et omnes commoditates et mercimonia quae iis videbuntur necessaria in regnum nostrum Scotiae sine alicujus taxationis custumae aut impositionis pro eisdem solutione nobis vel nostris custumariis aut eorum deputatis inde portandi eosdem ab eorum officiis in hac parte pro spatio septem annorum diem datae praesentium immediate sequentium inhibendo quamquidem solam commoditatem per spatium tredecim annorum in posterum libere concessimus tenoreque praesentis cartae nostrae concedimus et disponimus dicto Domino Willelmo suisque praedictis secundum proportionem quinque pro centum postea mentionatam Et post tredecim illos annos finitos licitum erit nobis nostrisque successoribus ex omnibus bonis et mercimoniis quae ex hoc regno nostro Scotiae ad eandem provinciam vel ex ea provincia ad dictum regnum nostrum Scotiae exportabuntur vel importabuntur in

[1] Sic. in Reg.—Should be *subditos nostros.*

occasion shall require. And as it is very important that all our beloved subjects who inhabit the said province of New Scotland or its borders may live in the fear of Almighty God and at the same time in his true worship, and may have an earnest purpose to establish the Christian religion therein, and also to cultivate peace and quiet with the native inhabitants and savage aborigines of these lands, so that they, and any others trading there, may safely, pleasantly and quietly hold what they have got with great labour and peril, we, for ourselves and successors, do will and decree, and by our present charter give and grant to the said Sir William Alexander and his aforesaids and their deputies, or any other of our government officers and ministers whom they shall appoint, free and absolute power of arranging and securing peace, alliance, friendship, mutual conferences, assistance and intercourse with those savage aborigines and their chiefs, and any others bearing rule and power among them ; and of preserving and fostering such relations and treaties as they or their aforesaids shall form with them ; provided those treaties are, on the other side, kept faithfully by these barbarians ; and, unless this be done, of taking up arms against them, whereby they may be reduced to order, as shall seem fitting to the said Sir William and his aforesaids and deputies, for the honour, obedience and service of God, and the stability, defence and preservation of our authority among them ; which power also to the said Sir William Alexander and his aforesaids, by themselves or their deputies, substitutes or assigns, for their defence and protection at all times and on all just occasions hereafter, of attacking suddenly, invading, expelling and by arms driving away, as well by sea as by land, and by all means, all and singly those who, without the special license of the said Sir William and his aforesaids, shall attempt to occupy these lands, or trade in the said province of New Scotland, or in any part of the same ; and in like manner all other persons who presume to bring any damage, loss, destruction, injury or invasion against that province, or the inhabitants of the same : And that this may be more easily done, it shall be allowed to the said Sir William and his aforesaids, their deputies, factors and assigns to levy contributions on the adventurers and inhabitants of the same ; to bring them together by proclamations, or by any other order, at such times as shall seem best to the said Sir William and his aforesaids ; to assemble all our subjects living within the limits of the said New Scotland and trading there, for the better supplying of the army with necessaries, and the enlargement and increase of the people and planting of said lands : With full power, privilege, and liberty to the said Sir William Alexander and his aforesaids, by themselves or their agents of sailing over any seas whatever under our ensigns and banners, with as many ships, of as great burden, and as well furnished with ammunition, men and provisions as they are able to procure at any time, and as often as shall seem expedient ; and of carrying all persons of every quality and grade who are our subjects, or who wish to submit themselves to our sway, for entering upon such a voyage with their cattle, horses, oxen, sheep, goods of all kinds, furniture, machines, heavy arms, military instruments, as many as they desire, and other commodities and necessaries for the use of the same colony, for mutual commerce with the natives of these provinces, or others who may trade with these plantations ; and of transporting all commodities and merchandise, which shall seem to them needful, into our Kingdom of Scotland without the payment of any tax, custom and impost, for the same to us, or our custom-house officers, or their deputies ; and of carrying away the same from their offices on this side, during the space of seven years following the day of the date of our present charter ; and to have this sole privilege for the space of three years next hereafter we freely have granted, and by the tenor our present charter grant and give to the said Sir William and his aforesaids, according to the terms hereinafter mentioned.

quibusvis hujus regni nostri portubus per dictum Willelmum suosque praedictos tantum quinque libras pro centum secundum antiquam negotiandi morem sine ulla alia impositione taxatione custuma vel devoria ab ipsis imperpetuum levare et exigere quaquidem summa quinque librarum pro centum sic soluta per dictum Dominum Willelmum suosque praedictos aliisque nostris officiariis ad hunc effectum constitutis exinde licitum erit dicto Domino Willelmo suisque praedictis eadem bona de nostro hoc regno Scotiae in quasvis alias partes vel regiones extraneas sine alicujus alterius custumae taxationis vel devoriae solutione nobis vel nostris haeredibus aut successoribus aut aliquibus aliis transportare et avehere proviso tamen quod dicta bona infra spatium tredecim mensium post ipsarum in quovis hujus regni nostri portu appulsionem navi rursus imponantur Dando et concedendo absolutam et plenariam potestatem dicto Domino Willelmo suisque praedictis ab omnibus nostris subditis qui colonias ducere mercimonia exercere aut ad easdem terras Novae Scotiae et ab eisdem navigare voluerint praeter dictam summam nobis debitam pro bonis et mercimoniis quinque libras de centum vel ratione exportationis ex hoc regno nostro Scotiae ad provinciam Novae Scotiae vel importationis a dicta provincia ad regnum hoc nostrum Scotiae praedictum in ipsius ejusque praedictorum proprios usus sumendi levandi et recipiendi et similiter de omnibus bonis et mercimoniis quae per nostros subditos coloniarum ductores negotiatores et navigatores de dicta provincia Novae Scotiae ad quaevis nostra dominia aut alia quaevis loca exportabuntur vel a nostris regnis et aliis locis ad dictam Novam Scotiam importabuntur ultra et supra dictam summam nobis destinatam quinque libras de centum Et de bonis et mercimoniis omnium extraneorum aliorumque sub nostra obedientia [minime] existentium quae vel de provincia Novae Scotiae exportabuntur vel ad eandem importabuntur ultra et supra dictam summam nobis destinatam decem libras de centum dicti Domini Willelmi suorumque praedictorum propriis usibus per tales ministros officiarios vel substitutos eorumve deputatos aut factores quos ipsi ad hunc effectum constituent et designabunt levandi sumendi ac recipiendi Et pro meliori dicti Domini Willelmi suorumque praedictorum aliorumque omnium dictorum nostrorum subditorum qui dictam Novam Scotiam inhabitare vel ibidem mercimonia exercere voluerint securitate et commoditate et generaliter omnium aliorum qui nostrae authoritati et potestati sese subdere non gravabunter nobis visum est volumusque quod licitum erit dicto Domino Willelmo suisque praedictis unum aut plura munimina propugnacula castella loca fortia specula armamentaria *lie blokhouss* aliaque aedificia cum portubus et navium stationibus aedificare vel aedificari causare unacum navibus bellicis easdemque pro defensione dictorum locorum applicare sicut dicto Domino Willelmo suisque praedictis pro dicto conamine perficiendo necessarium videbitur proque ipsorum defensione militum catervas ibidem stabilire praeter praedicta supramentionata et generaliter omnia facere quae pro conquaestu augmentatione populi inhabitatione preservatione et gubernatione dictae Novae Scotiae ejusdemque orarum et territorii infra omnes hujusmodi limites pertinentias et dependentias sub nostro nomine et authoritate quodcunque nos si personaliter essemus praesentes facere potuimus licet casus specialem et strictum magis ordinem quam per praesentes praescribitur requirat cui mandato volumus et ordinamus strictissimeque praecipimus omnibus nostris justiciariis officiariis et subditis ad loca illa sese conferentibus ut sese applicent dictoque Domino Willelmo suisque praedictis in omnibus et singulis supra mentionatis earum substantiis circumstantiis et dependentiis intendant et obediant eisque in earum executione in omnibus adeo sint obedientes ut nobis cujus personam representat esse deberent sub pena disobedientiae et rebellionis Et quia fieri potest quod quidam ad dicta loca transportandi refractarii sint et ad eadem loca ire recusabunt aut dicto Domino Willelmo suisque praedictis resistent nobis igitur placet quod omnes vicecomites senescalli regalitatum ballivi pacis justiciarii praepositi et urbium ballivi eorumque officiarii et justiciae ministri quicunque dictum Dominum Willelmum suosque deputatos aliosque praedictos in omnibus et singulis legitimis rebus et factis quas facient aut

And after these three years are ended, it shall be lawful, to us and our successors, to levy and exact from all goods and merchandise which shall be exported from this our Kingdom of Scotland to the said province of New Scotland, or imported from this province to our said Kingdom of Scotland; in any ports of this our kingdom, by the said Sir William and his aforesaids, for five per cent. only, according to the old mode of reckoning, without any other impost, tax, custom or duty from them hereafter; which sum of five pounds per hundred being thus paid, by the said Sir William and his aforesaids, to our officers and others appointed for this business, the said Sir William and his aforesaids may carry away the said goods from this our realm of Scotland into any other foreign ports and climes, without the payment of any other custom, tax or duty to us or our heirs or successors or any other persons; provided also that said goods, within the space of thirteen months after their arrival in any part of this our kingdom, may be again placed on board a ship. We also give and grant absolute and full power to the said Sir William and his aforesaids, of taking, levying and receiving to his own proper use and that of his aforesaids, from all our subjects who shall desire to conduct colonies, follow trade, or sail to said land of New Scotland, and from the same, for goods and merchandise, five per cent. besides the sum due to us; whether on account of the exportation from this our Kingdom of Scotland to the said province of New Scotland, or of the importation from the said province to this our Kingdom of Scotland aforesaid; and in like manner, from all goods and merchandise which shall be exported by our subjects, leaders of colonies, merchants, and navigators from the said province of New Scotland, to any of our dominions or any other places; or shall be imported from our realms and elsewhere to the said New Scotland, five per cent. beyond and above the sum before appointed to us; and from the goods and merchandise of all foreigners and others not under our sway which shall be either exported from the said province of New Scotland, or shall be imported into the same, beyond and above the said sum assigned to us, ten per cent. may be levied, taken and received, for the proper use of the said Sir William and his aforesaids, by such servants, officers or deputies, or their agents, as they shall appoint and authorize for this business. And for the better security and profit of the said Sir William and his aforesaids, and of all our other subjects desiring to settle in New Scotland aforesaid, or to trade there, and of all others in general who shall not refuse to submit themselves to our authority and power, we have decreed and willed that the said Sir William may construct, or cause to be built, one or more forts, fortresses, castles, strongholds, watch-towers, block-houses, and other buildings, with ports and naval stations, and also ships of war; and the same shall be applied for defending the said places, as shall, to the said Sir William and his aforesaids, seem necessary to accomplish the aforesaid undertaking; and they may establish for their defence there, garrisons of soldiers, in addition to the things above mentioned; and generally may do all things for the acquisition, increase and introduction of people, and to preserve and govern the said New Scotland and the coast and land thereof, in all its limits, features and relations, under our name and authority, as we might do if present in person; although the case may require a more particular and strict order than is prescribed in this our present charter; and to this command we wish, direct and most strictly enjoin all our justices, officers and subjects frequenting these places to conform themselves, and to yield to and obey the said Sir William and his aforesaids in all and each of the above-mentioned matters, both principal and related; and be equally obedient to them in their execution as they ought to be to us whose person he represents, under the pains of disobedience and rebellion. Moreover, we declare, by the tenor of our present charter to all Christian kings, princes

intendent ad effectum praedictum similiter et eodem modo sicuti nostrum speciale warrantum ad hunc effectum haberent assistent fortisficient et eisdem suppetias ferant Declaramus insuper per praesentis cartae nostrae tenorem omnibus christianis regibus principibus et statibus quod si aliquis vel aliqui qui in posterum de dictis coloniis vel de earum aliqua sit in dicta provincia Novae Scotiae vel aliqui alii sub eorum licentia vel mandato quovis tempore futuro piraticam exercentes per mare vel terram bona alicujus abstulerint vel aliquod injustum vel indebitum hostiliter contra aliquos nostros nostrorumve haeredum et successorum aut aliorum regum principum gubernatorum aut statuum in foedere nobiscum existentium subditos quod tali injuria sic oblata aut justa querela desuper mota per aliquem regem principem gubernatorem statum vel eorum subditos praedictos nos nostri haeredes et successores publicas proclamationes fieri curabimus in aliqua parte dicti regni nostri Scotiae ad hunc effectum magis commoda ut dictus pirata vel piratae qui tales rapinas committent stato tempore per praefatas proclamationes limitando plenarie restituent quaecunque bona sic ablata et pro dictis injuriis omnimodo satisfaciant ita ut dicti principes aliique sic conquaerentes satisfactos se esse reputent et quod si talia facinora committent bona ablata non restituent aut restitui faciant infra limitatum tempus quod tunc in posterum sub nostra protectione et tutela minime erunt et quod licitum erit omnibus principibus aliisque praedictis delinquentes eos hostiliter prosequi et invadere Et licet neminem nobilem aut generosum de patria hac sine licentia nostra decedere statutum sit nihilominus volumus quod praesens hoc diploma sufficiens erit licentia et warrantum omnibus qui se huic itineri committent qui laesaemajestatis non sunt rei vel aliquo alio speciali mandato inhibiti atque etiam per praesentis cartae nostrae tenorem declaramus volumusque quod nemo patria hac decedere permittatur versus dictam Novam Scotiam nullo tempore nisi ii qui juramentum supremitatis nostrae primum susceperint ad quem effectum nos per praesentes dicto Domino Willelmo suisque praedictis vel eorum conservatori vel deputatis idem hoc juramentum omnibus personis versus illas terras in ea colonia sese conferentibus requirere et exhibere plenariam potestatem et authoritatem damus et concedimus Praeterea nos cum avisamento et consensu praedicto pro nobis et successoribus nostris declaramus decernimus et ordinamus quod omnes nostri subditi qui ad dictam Novam Scotiam proficiscentur aut eam incolent eorumque omnes liberi et posteritas qui [quos] ibi nasci contigerit aliique omnes ibidem periclitantes habebunt et possidebunt omnes libertates immunitates et privilegia liberorum et naturalium subditorum regni nostri Scotiae aut aliorum nostrorum dominiorum sicuti ibidem nati fuissent Insuper nos pro nobis et successoribus nostris damus et concedimus dicto Domino Willelmo Alexander suisque praedictis liberam potestatem stabiliendi et cudere causandi monetam pro commercio liberiori inhabitantium dictae provincia cujusvis metalli quo modo et qua forma voluerint et eisdem praescribent Atque etiam si quae quaestiones aut dubia super interpretatione aut constructione alicujus clausulae in hac presenti carta nostra contentae occurrent ea omnia sumentur et interpretabuntur in amplissima forma et in favorem dicti Domini Willelmi suorumque praedictorum Praeterea nos ex nostra certa scientia proprio motu authoritate regali et potestate regia fecimus univimus annexavimus ereximus creavimus et incorporavimus tenoreque praesentis cartae nostrae facimus unimus annexamus erigimus creamus et incorporamus totam et integram praedictam provinciam et terras Novae Scotiae cum omnibus earundem limitibus et maribus[1] ac mineralibus auri et argenti plumbi cupri chalibus stanni aeris ferri aliisque quibuscunque fodinis margaritis lapidibus praeciosis lapicidinis silvis virgultus mossis marresiis lacubus aquis piscationibus tam in aquis dulcibus quam salsis tam regalium piscium quam aliorum civitatibus liberis portubus liberis burgis urbibus baroniae burgis maris portubus anchoragiis machinis molendinis officiis et jurisdictionibus omnibusque aliis generaliter et particulariter supra mentionatis in unum integrum et liberum dominium et baroniam per praedictum nomen Novae Scotiae omni tempore

[1] In Reg. Mag. Sigilli *mariis.*

and states, that if, hereafter, any one, or any, from the said colonies, in the province of New Scotland aforesaid, or any other persons under their license and command, exercising piracy; at any future time, by land or by sea, shall carry away the goods of any person, or in a hostile manner do any injustice or wrong to any of our subjects, or those of our heirs or successors, or of other kings, princes, governors or states in alliance with us, then, upon such injury offered, or just complaint thereupon, by any king, prince, governor, state or their subjects, we, our heirs and successors will see that public proclamations are made, in any part of our said Kingdom of Scotland, just and suitable for this purpose, and that the said pirate or pirates, who shall commit such violence, at a stated time, to be determined by the aforesaid proclamation, shall fully restore all goods so carried away; and for the said injuries shall make full satisfaction, so that the said princes and others thus complaining shall deem themselves satisfied. And, if the authors of such crimes shall neither make worthy satisfaction, nor be careful that it be made within the limited time, then he, or those who have committed such plunder, neither are nor hereafter shall be under our government and protection; but it shall be permitted and lawful to all princes and others whatsoever, to proceed against such offenders, or any of them, and with all hostility to invade them.

And though it is appointed that no nobleman and gentleman may depart from this country without our consent, yet we will that this our present charter be a sufficient permission and assurance to all engaging in the said voyage, save those who may be accused of treason or retained by any special order; and according to our present charter, we declare and decree that no person may leave this country and go to the said region of New Scotland unless they have previously taken the oath of allegiance to us; for which purpose, we, by our present charter, give and grant the said Sir William and his aforesaids, or their conservators and deputies, full power and authority to exact the said oath from and administer it to all persons proceeding into the said lands in that colony. Moreover, we for ourselves and our successors, with the advice and consent aforesaid, declare, decree and ordain that all our subjects, going to the said New Scotland, or living in it, and all their children and posterity born there, and all adventuring there, shall have and enjoy all the liberties, rights and privileges of free and native subjects of our Kingdom of Scotland, or of our other dominions, as if they had been born there.

Also, we for ourselves, and our successors, give and grant to the said Sir William and his aforesaids the free power of regulating and coining money for the freer commerce of those inhabiting the said province, of any metal, in what manner and of what form they shall choose and direct for the same.

And if any questions or doubts shall arise on the meaning and construction of any clause in our present charter, all these shall be taken and explained in their amplest form, and in favour of the said Sir William and his aforesaids. Besides we, of our certain knowledge, proper motive, regal authority and kingly power, have made, united, annexed, erected, created and incorporated, and, by the tenor of our present charter, do make, unite, annex, erect, create and incorporate, the whole and undivided, the said province and lands of New Scotland, with all the seas and limits of the same, and minerals of gold and silver, lead, copper, steel, tin, brass, iron and any other mines, pearls, precious stones, quarries, forests, thickets, mosses, marshes, lakes, waters, fisheries as well in fresh waters as in salt, as well of royal fishes as of others, cities, free ports, free villages, towns, baronial villages, seaports, roadsteads, machines, mills, offices and jurisdictions, and all other things generally and particularly mentioned above, in

futuro appellandum Volumusque et concedimus ac pro nobis et successoribus nostris decernimus et ordinamus quod unica sasina nunc per dictum Dominum Willelmum suosque praedictos omni tempore affutoro super aliquam partem fundi dictarum terrarum et provinciae praescriptae stabit et sufficiens erit sasina pro tota regione cum omnibus partibus pendiculis privilegiis casualitatibus libertatibus et immunitatibus ejusdem supermentionatis absque aliqua alia speciali et particulari sasina per ipsum suosve praedictos apud aliquam aliam partem vel ejusdem locum capienda penes quam sasinam omniaque quae inde secuta sunt aut sequi possunt nos cum avisamento et consensu praescripto pro nobis et successoribus nostris dispensavimus tenoreque praesentis cartae nostrae modo subtus mentionato dispensamus imperpetuum TENANDAM ET HABENDAM totam et integram dictam regionem et dominium Novae Scotiae cum omnibus ejusdem limitibus infra praedicta maria mineralibus auri et argenti cupri chalibis stanni ferri aeris aliisque quibuscunque fodinis margaritis lapidibus praeciosis lapicidinis silvis virgultis mossis marresiis lacubus aquis piscationibus tam in aquis dulcibus quam salsis tam regalium piscium quam aliorum civitatibus liberis burgis liberis portubus urbibus baroniae burgis maris portubus anchoragiis machinis molendinis officiis et jurisdictionibus omnibusque aliis generaliter et particulariter supra mentionatis cumque omnibus aliis privilegiis libertatibus immunitatibus casualitatibus aliisque supra expressis praefato Domino Willelmo Alexander haeredibus suis et assignatis de nobis nostrisque successoribus in feodo haereditate libero dominio libera baronia et regalitate imperpetuum modo supramentionato per omnes rectas metas et limites suas prout jacent in longitudine et latitudine in domibus aedificiis aedificatis et aedificandis boscis planis moris marresiis viis semitis aquis stagnis rivolis pratis pascuis et pasturis molendinis multuris et eorum sequelis aucupationibus venationibus piscationibus petariis turbariis carbonibus carbonariis cuniculis cunicularis columbis columbariis fabrilibus brasinis brueriis et genistis silvis nemoribus et virgultis lignis lapicidiis lapide et calce cum curiis et curiarum exitibus herezeldis bludewetis et mulierum marchetis cum furca fossa sok sak thole thame infangtheiff outfangtheiff vert wrak wair veth vennysoun pitt et gallous ac cum omnibus aliis et singulis libertatibus commoditatibus proficuis asiamentis ac justis suis pertinentiis quibuscunque tam non nominatis quam nominatis tam subtus terra quam supra terram procul et prope ad praedictam regionem spectantibus seu juste spectare valentibus quomodolibet in futurum libere quiete plenarie integre honorifice bene et in pace absque ulla revocatione contradictione impedimento aut obstacula aliquali Solvendo inde annuatim dictus Dominus Willelmus Alexander suique praedicti nobis nostrisque haeredibus et successoribus unum denarium monetae Scotiae super fundum dictarum terrarum et provinciae Novae Scotiae ad festum Nativitatis Christi nomine albae firmae si petatur tantum Et quia tentione dictarum terrarum et provinciae Novae Scotiae et alba firma praedicta deficiente tempestivo et legitimo introitu cujusvis haeredis vel haeredum dicti Domini Willelmi sibi succedentium quod difficulter per ipsos praestari potest ob longinquam distantiam ab hoc regno nostro eaedem terrae et provincia ratione non-introitus in manibus nostris nostrorumve successorum devenient usque ad legitimum legitimi haeredis introitum et nos nolentes dictas terras et regionem quovis tempore in non-introitu cadere neque dictum Dominum Willelmum suosque praedictos beneficiis et proficuis ejusdem eatenus frustrari idcirco nos cum avisamento praedicto cum dicto non-introitu[1] quandocunque contigerit dispensavimus tenoreque praesentis cartae nostrae pro nobis et successoribus nostris dispensamus ac etiam renunciavimus et exoneravimus tenoreque ejusdem cartae nostrae cum consensu praedicto renunciamus et exoneramus dictum Dominum Willelmum ejusque praescriptos praefatum non-introitum dictae provinciae et regionis quandocunque in manibus nostris deveniet aut ratione non-introitus cadet cum omnibus quae desuper sequi possunt proviso tamen quod dictus Dominus Willelmus suique haeredes et assignati infra spatium septem annorum post decessum et obitum suorum praedecessorum aut introitum ad

[1] In Reg. Mag. Sigilli *introitu*.

one entire and free lordship and barony which shall be called in all future time by the aforesaid name of New Scotland.

And we will and grant, and for ourselves and our successors decree and order, that one seisin now made by the said Sir William and his aforesaids, upon any part of the soil of the said lands and upon the province before described, shall in all future time be effective; and shall be a sufficient seisin for the whole region with all the parts, appendages, privileges, accidents, liberties, and immunities, of the same mentioned above, without any other special and definite seisin to be taken by himself or his aforesaids on any other part or place of the same. And concerning this seisin and all things which have followed it, or can follow it, with the advice and consent above mentioned, for ourselves and successors have dispensed, and by the tenor of our present charter, in the manner hereafter mentioned, do dispense for ever: To hold and to possess, the whole and undivided, the said region and lordship of New Scotland, with all the bounds of the same within the seas above mentioned, all minerals of gold and silver, copper, steel, tin, lead, brass and iron and any other mines, pearls, precious stones, quarries, woods, thickets, mosses, marshes, lakes, waters, fisheries, as well in fresh water as salt, as well of royal fishes as of others, states, free towns, free ports, towns, baronial villages, seaports, roadsteads, machines, mills, offices and jurisdictions, and all other things generally and specially mentioned above; with all other privileges, liberties, immunities and accidents, and other things above mentioned, to the aforesaid Sir William Alexander, his heirs and assigns, from us and our successors, in free covenant, inheritance, lordship, barony and royalty, for ever, through all their just bounds and limits, as they lie in length and breadth, in houses, buildings erected and to be erected, bogs, plains and moors, marshes, roads, paths, waters, swamps, rivers, meadows and pastures, mines, malt-houses and their refuse, hawkings, huntings, fisheries, peat-mosses, turf-bogs, coal, coal-pits, coneys, warrens, doves, dove-cotes, workshops, malt-kilns, breweries and broom-woods, groves and thickets; wood, timber, quarries of stone and lime; with courts, fines, pleas, heriots, outlaws, rabbles of women, with free entrance and exit, and with fork, foss, fok, fac, theme, infangtheiff, wrak, wair, veth, vert, vennesonn, pit and gallows; and with all other and singly, the liberties, commodities, profits, easements and their rightful pertinents of all kinds, whether mentioned or not, above or below ground, far and near, belonging, or that can belong, to the aforesaid region and lordship, in any manner, for the future, freely, quietly, fully, wholly, honourably, well and in peace, without any revocation, contradiction, impediment, or obstacle whatever. Annually, at the festival of Christ's nativity, on the soil of the said lands and of the province of New Scotland, the said Sir William Alexander and his aforesaids shall pay to us and our heirs and successors, under the name of quit-rent, one penny of Scottish money, if so much be demanded.

And because the tenure of the said lands, and of the province of New Scotland, and the quit-rent above-mentioned, may fail through want of the timely and lawful entry of any heir or heirs of the said Sir William succeeding him, a thing which they may not easily accomplish on account of the great distance from our kingdom; and these same lands and province, on account of non-entrance, may come into our hands and those of our successors until the lawful entrance of the legitimate heir; and we being unwilling that the said lands and region at any time should fall into non-entry, or that the said Sir William and his aforesaids should be thus deprived of the benefits and profits of the same, therefore we, with the advice aforesaid, have dispensed with the said non-entry whenever it shall occur, and, by the tenor of this our charter, we, for ourselves and our successors, do dispense; and also we have renounced and exonerated, and by the tenor of our present charter, with the consent aforesaid, we do

possessionem dictarum terrarum aliorumque praedictorum per ipsos vel eorum legitimos procuratores ad hunc effectum potestatem habentes nobis nostrisque successoribus homagium faciant et dictas terras dominium et baroniam aliaque praedicta adeant et per nos recipiantur secundum leges et statuta dicti regni nostri Scotiæ Denique nos pro nobis et successoribus nostris volumus decernimus et ordinamus praesentem hanc nostram cartem et infeofamentum supra scriptam praedictarum terrarum dominii et regionis Novae Scotiae privilegia et libertates ejusdem in proximo nostro parliamento dicti regni nostri Scotiae cum contigerit ratificari approbari et confirmari ut vim et efficaciam decreti inibi habeat penes quod nos pro nobis et successoribus nostris declaramus hanc nostram cartam sufficiens fore warrantum et in verbo principis eandem ibi ratificari et approbari promittimus atque etiam alterare renovare et eandem in amplissima forma augere et extendere quoties dicto Domino Willelmo ejusque praedictis necessarium et expediens videbitur Insuper nobis visum est ac mandamus et praecipimus dilectis nostris vicecomitibus nostris in hac parte specialiter constitutis quatenus post hujus cartae nostrae nostro sub magno sigillo aspectum statum et sasinam actualem et realem praefato Domino Willelmo suisque praedictis eorumve actornato vel actornatis terrarum dominii baroniae aliorumque praedictorum cum omnibus liberatibus privilegiis immunitatibus aliisque supra expressis dare et concedere quam sasinam nos per praesentis cartae nostrae tenorem adeo legitimam et ordinariam esse declaramus ac si praeceptum sub testimonio nostri Magni Sigilli in amplissima forma cum omnibus clausulis requisitis ad hunc effectum praedictum haberet penes quod nos pro nobis et successoribus nostris imperpetuum dispensamus In cujus rei testimonium huic praesenti cartae nostrae magnum sigillum nostrum apponi praecepimus testibus praedilectis nostris consanguineis et consiliariis Jacobo Marchione de Hammiltoun comite Arranie et Cambridge domino Aven et Innerdaill Georgio Mariscalli comite domino Keyth &c. regni nostri mariscallo Alexandro comite de Dumfermeling domino Fyvie et Urquhart &c. nostro cancellario Thoma comite de Melros domino Binning et Byres nostro secretario dilectis nostris familiaribus consiliariis dominis Ricardo Cokburne juniore de Clerkingtoun nostri secreti sigilli custode Georgio Hay de Kinfawnis nostrorum rotulorum registri ac consilii clerico Joanne Cokburne de Ormestoun nostrae justiciariae clerico et Joanne Scott de Scotstarvett nostrae cancellariae directore militibus Apud castellum nostrum de Windsore decimo die mensis Septembris anno Domini millesimo sexcentesimo vigesimo primo regnorumque nostrorum annis quinquagesimo quinto et decimo nono.

Per signaturam manu S. D. N. Regis suprascriptam ac manibus Cancellarii Thesaurarii Principalis Secretarii ac reliquorum Dominorum nostrorum Commissionariorum ac Secreti Consilii ejusdem Regni Scotiae subscriptam.

Writtin to the Great Seall,

29. Septemb. 1621.

J. Scott, *gratis.*

Sigellat. Edinburgi

29. Septemb. 1621,

Ja. Raithe, *gratis.*

renounce and exonerate the said Sir William and his aforesaids in respect to the above-mentioned non-entrance of the said province and region whenever it shall come into our hands, or, by reason of non-entry, may fail, with all things that can follow therefrom ; provided, however, that the said Sir William, his heirs and assigns, within the space of seven years after the decease and death of their predecessors, or entry to the possession of said lands, and of other things aforesaid, by themselves or their lawful agents holding power for this purpose, do homage to us and our successors, and come to and receive through us, the same lands, lordship, barony and other things aforesaid, according to the laws and statutes of our said Kingdom of Scotland. Finally, we, for ourselves, and our successors, do will, decree and ordain that this our present charter and enfeoffment above written of the lands aforesaid, lordship, and region of New Scotland, and the privileges and liberties of the same, shall be ratified, approved and established in our next Parliament of our said Kingdom of Scotland whenever it shall meet, so that it shall have therein the force and efficacy of a decree ; and for this we, for ourselves and our successors, declare that this our charter shall be a sufficient warrant ; and as a prince, we promise that the same shall be ratified and approved, and also we promise to alter, renew, increase and extend the same into the most ample form, as often as it shall deem necessary and expedient to the said Sir William and his aforesaids.

Moreover it has seemed best to us, and we order and enjoin our beloved . . . our sheriffs especially appointed on our part, on seeing this our charter under our great seal, so to give and grant to the aforesaid Sir William and his aforesaids, or their attorney or attorneys, possession and seisin, actual and real, of the lands, lordship, barony and other things mentioned above, with all privileges, immunities, liberties, and other things above expressed : and this seisin we, by the tenor of our present charter, declare to be as lawful and regular as if he had a precept, under proof of our Great Seal, and in the most ample form, with all clauses requisite for the aforesaid purpose ; with which we, for ourselves and our successors, do for ever dispense. In witness whereof we have commanded our Great Seal to be affixed to this our present charter. Witnesses :—Our well-beloved cousins and councillors, James, Marquis of Hamilton, Earl of Arran and Cambridge, Lord Aven and Innerdaill ; George, Earl Marischal, Lord Keith, &c., Marshal of our Kingdom ; Alexander, Earl of Dunfermline, Lord Fyvie and Urquhart, &c., our Chancellor ; Thomas, Earl of Melros, Lord Binning and Byres, our Secretary :—Our beloved familiar Councillors, Baronets ; Sir Richard Cockburn, junior, of Clerkington, Keeper of our Privy Seal ; Sir George Hay, of Kinfawins, our Register of the Rolls and Clerk of the Council Sir John Cockburn, of Ormiston, Clerk of our Justiciary ; and Sir John Scott Scotstarvet, Director of our Chancery, Knights.

At our Castle of Windsor, the tenth day of September, in the year of our Lord 1621, and of our Reigns the fifty-fifth and nineteenth years respectively.

By signature superscribed by the hand of our Sovereign Lord the King ; and subscribed by the hands of our Chancellor, Treasurer, Provincial Secretary, and of the other Lords, our Commissioners, and of our Privy Council of the said Kingdom of Scotland.

Written to the Great Seal, 29 September, 1621.

J. SCOTT,
gratis.

Sealed at Edinburgh 29 September, 1621.

JA. RAITHE.
gratis.

NOTE.—This translation is made from the Latin as found in the "Great Seal Register," and printed in the collection of Royal Letters, Charters and Tracts, by the Bannatyne Club, Edinburgh, '67.

N.B. "In the Regist. Mag. Sigilli the names of the witnesses are not given, but only a reference as specified in an earlier chapter in the Record. The endorsement of the charter 'Written,' &c., of course is not found in the Register itself." Note by David Laing, LL.D., Bannatyne Collection of Royal Letters, Charters and Tracts.

APPENDIX C.

HIS MAJESTY'S COMMISSION TO HIS EXCELLENCY GOVERNOR CORNWALLIS.

From Akins's "Selections from the Public Documents of the Province of Nova Scotia."

George the Second, by the grace of God of Great Britain, France and Ireland, King, Defender of the Faith, etc. To our Trusty and well beloved the Honourable Edward Cornwallis, Esq., a greeting :—

Whereas we did by our Letters Patent under our Great Seal of Great Britain bearing date at Westminster the 11th day of September, in the second year of Our Reign constitute and appoint Richard Philipps, Esquire, our Captain General and Governor in Chief in and over our Province of Nova Scotia or Acadia in America, with all the rights, members and appurtenances whatsoever belonging, for and during our will and pleasure, as by the said recited Letters Patent relation being thereunto had may more fully and at large appear.

Now, know you that we have revoked and Determined, and by these presents do Revoke and Determine the said recited Letters Patent, and every clause, article and thing therein contained ; and Further, Know you that we reposing special trust and confidence in the prudence, courage and Loyalty of you, the said Edward Cornwallis, of our especial Grace certain knowledge and mere motion, have thought fit to constitute and appoint you, the said Edward Cornwallis, to be our Captain General and Governor in Chief in and over our Province of Nova Scotia or Acadia in America with all the rights, members and appurtenances whatsoever thereunto belonging, and we do hereby require and command you to do and execute all things in due manner that shall belong to your said command and the Trust we have reposed in you according to the several powers and authorities granted or appointed you by this present commission and instructions herewith given you or by such further powers, Instructions and authorities as shall at any time hereafter be granted or appointed you under our signet and sign manual or by our order in our Privy Council and according to such Reasonable Laws and Statutes as hereafter shall be made or agreed upon by you with the advice and consent of our Council and the Assembly of our said province under Your Government hereafter to be appointed in such manner and form as is hereafter expressed.

And for the better administration of Justice and management of the Publick affairs of our said province, we hereby give and grant unto you the said Edward Cornwallis full power and authority to Chuse, nominate and appoint such fitting and discreet persons as you shall either find there or carry along with you, not exceeding the number of Twelve, to be of our Council in our said Province. As also to nominate and appoint by warrant under your hand and seal and such other officers and ministers as you shall judge proper and necessary for our service and the good of the people whom

we shall settle in the said Province until our further will and pleasure shall be known.

And our will and pleasure is that you said Edward Cornwallis (After the publication of these our Letters Patent) do take the Oath appointed to be taken by an Act passed in the first year of His Late Majesty's our Royal Father's Reign, Entitled an Act for the further security of His Majesty's Person and Government and the succession of the Crown in the Heirs of the late Princess Sophia, being Protestants, and for extinguishing the hopes of the pretended Prince of Wales and his open and secret abettors. As also that you make and subscribe the Declaration mentioned in an Act of Parliament made in the Twenty-fifth year of the Reign of King Charles the Second, entitled an Act for preventing dangers which may happen from Popish Recusants. And likewise that you take the usual oath for the due execution of the office and trust of Our Captain General and Governor in Chief of our said province for the due and impartial administration of Justice; and further that you take the oath required to be taken by Governors of Plantations to do their utmost, that the several laws relating to trade and the plantations be observed. All which said oaths, Declarations Our Council in our said Province or any five members thereof have hereby full power and authority and are required to tender and administer unto you and in your absence to our Lieutenant Governor, if there be any upon the place, all which being duly performed you shall administer unto each of the members of our said Council as also to Our Lieutenant Governor, if there be any upon the place, the said Oaths mentioned in the said Act entitled an Act for the further security of His Majesty's person and Government, and the succession of the Crown in the Heirs of the late Princess Sophia being Protestants and for extinguishing the hopes of the pretended Prince of Wales and his open and secret abettors; as also to cause them to make and subscribe the aforementioned declaration and to administer to them the Oath for the due execution of their places and trusts.

And We do hereby give and grant unto you full power and authority to suspend any of the members of our said Council to be appointed by you as aforesaid from sitting, voting and assisting therein if you shall find just cause for so doing.

And if it shall at any time happen that by the Death, departure out of our said Province, suspension of any of our said Councillors or otherwise there shall be a vacancy in our said Council (any five whereof we do hereby appoint to be a Quorum) our will and pleasure is that you signify the same unto us by the first opportunity that we may under our signet and sign manual constitute and appoint others in their stead.

But that our affairs at that distance may not suffer for want of a due number of Councillors if ever it shall happen that there shall be less than nine of them residing in our said Province we hereby give and grant unto you the said Edward Cornwallis full power and authority to Chuse as many persons out of the principal freeholders inhabitants thereof as will make up the full number of our said Council to be nine and no more; which person so chosen and appointed by you shall be to all intents and purposes Councillors in our said Province until either, they shall be confirmed by us or that by the nomination of others by us under our sign manual or signet our said Council shall have nine or more persons in it.

And We do hereby give and grant unto you full power and authority with the advice and consent of our said Council from time to time as need shall require to summon and call General Assemblies of the Freeholders and Planters within your Government according to the usage of the rest of our Colonies and plantations in America.

And our will and pleasure is that the persons thereupon duly elected by

the major part of the Freeholders of the Respective Counties and places and so returned shall before their setting take the Oaths mentioned in the said Act entitled an Act for the further security of His Majesty's person and government and the succession of the Crown in the Heirs of the late Princess Sophia being Protestants, and for extinguishing the hopes of the pretended Prince of Wales and his open and secret abettors, as also make and subscribe the aforementioned Declaration (which Oaths and Declaration you shall commissionate fit persons under our seal of Nova Scotia to tender and administer unto them), and until the same shall be so taken and subscribed no person shall be capable of sitting tho' elected, and we do hereby declare that the persons so elected and qualified shall be called and deemed the General Assembly of that our Province of Nova Scotia.

And that you the said Edward Cornwallis with the advice and consent of our said Council and Assembly or the major part of them respectively shall have full power and authority to make, constitute and ordain laws, Statutes and Ordinances for the Publick peace, welfare and good government of our said Province and of the people and inhabitants thereof and such others as shall resort thereto and for the benefit of us, our Heirs and Successors, which said Laws, Statutes and Ordinances are not to be repugnant but as near as may be agreeable to the laws and Statutes of this our Kingdom of Great Britain.

Provided that all such Laws, Statutes and Ordinances of what nature or duration soever be within three months or sooner after the making thereof transmitted to us under Our Seal of Nova Scotia for our approbation or Disallowance thereof as also a duplicate by the next conveyance.

And in case any or all of the said Laws, Statutes and Ordinances not before confirmed by us shall at any time be disallowed and not approved and so signyfied by us, our Heirs or successors under our or their sign manual and signet or by order of our or their Privy Council unto you the said Edward Cornwallis or to the Commander in Chief of our said Province for the time being then such and so many of the said Laws, Statutes and Ordinances as shall be so disallowed and not approved shall from thenceforth cease, determine and become utterly void and of none effect anything to the contrary thereof notwithstanding.

And to the end that nothing may be passed or done by our said Council or Assembly to the prejudice of us, our Heirs and Successors We Will and ordain that you the said Edward Cornwallis shall have and enjoy a negative Voice in the making and passing of all Laws, Statutes and Ordinances as aforesaid.

And you shall and may likewise from time to time as you shall judge it necessary, adjourn, Prorogue and Dissolve all General Assemblies as aforesaid.

And our further will and pleasure is that you shall and may keep and use the Publick Seal of our Province of Nova Scotia for Sealing all things whatever that pass the Great Seal of Our said Province under your Government.

And We do further give and grant unto you the said Edward Cornwallis full power and authority from time to time and at any time hereafter by yourself or by any other to be authorized by you in that behalf to administer and give the Oaths mentioned in the aforesaid Act to all and every such person or persons as you shall think fit who shall at any time or times pass in our said province as shall be residing or abiding there. And We do by these presents give and grant unto you the said Edward Cornwallis full power and authority with advice and consent of our said Council to erect, constitute and establish such and so many courts of Judicature and publick Justice within our said Province and Dominion as you and they shall think fit and necessary for the hearing and determining all causes as well Criminal as Civil according to Law and Equity and for awarding the Execution there-

upon with all reasonable and necessary powers, Authorities, fees and Privileges belonging thereunto as also to appoint and commissionate fit persons in the several parts of your Government to administer the Oaths mentioned in the aforesaid Act entitled an Act for the further security of His Majesty's person and Government and the Succession of the Crown in the Heirs of the late Princess Sophia, being Protestants, and for extinguishing the hopes of the pretended Prince of Wales and his open and secret abettors ; As also to tender and Administer the aforesaid Declaration unto such persons belonging to the said Courts as shall be obliged to take the same.

And We do hereby authorize and empower you to constitute and appoint Judges and in cases requisite Commissioners of Oyer and Terminer, Justices of the peace and other necessary officers and ministers in our said province for the better administration of Justice and putting the Laws in execution and to administer or cause to be administered unto them such oath or oaths as are usually given for the due execution and performance of offices and places and for the clearing of truth in Judicial Causes.

And We do hereby give and grant unto you full power and Authority where you shall see cause or shall judge any offender or offenders in Crimnal matters or for any fines or forfeitures due unto us, fit objects of our mercy to pardon all such offenders and to remit all such offences, fines and forfeitures, Treason and wilful murder only excepted ; in which cases you shall likewise have power upon extraordinary occasions to Grant Reprieves to the offenders untill and to the intent our Royal Pleasure may be known therein.

We do by these presents Authorize and empower you to collate any person or Persons to any Churches, Chapels or other Ecclesiastical Benefices within our said Province as often as any of them shall happen to be void.

And We do hereby give and grant unto you the said Edward Cornwallis by yourself or by your captains and Commanders by you to be authorized full power and authority to levy, arm, muster, command and employ all persons whatsoever residing within our said province and as occasion shall serve to march from one place to another or to embark them for the resisting and withstanding of all enemies, Pirates and Rebels, both at Land and Sea, and to transport such forces to any of our plantations in America if necessity shall require for the defence of the same against the invasion or attempts of any of our enemies, and such enemies, Pirates and Rebels if there shall be occasion to pursue and prosecute in or out of the limits of our said Province and Plantations or any of them and (if it shall so please God) to vanquish, apprehend and take them and being taken, according to Law to put to death or keep and preserve them alive at your discretion and to execute Martial Law in time of invasion or other Times when by Law it may be executed and to do and execute all and every other thing or things which to our Captain General and Governor in Chief Doeth or ought of right to belong.

And we do hereby give and grant unto you full power and authority by and with the advice and consent of our said Council of Nova Scotia to erect, raise and build in our said province such and so many forts and platforms, castles, cities, boroughs, towns and fortifications as you by the advice aforesaid shall Judge Necessary, and the same or any of them to fortify and furnish with ordnance, ammunition and all sorts of arms fit and necessary for the security and defence of our said Province and by the advice aforesaid the same again or any of them to demolish or dismantle as may be most convenient.

And for as much as divers mutinies and disorders may happen by persons shipped and employed at sea during the time of war and to the end that such as shall be shipped and employed at sea during the time of War may be better governed and ordered, We hereby give and grant unto you the

said Edward Cornwallis full power and authority to constitute and appoint captains, lieutenants, masters of ships and other commanders and officers, and to grant such captains, lieutenants, masters of ships and other commanders and officers, commissions in time of war to execute the law martial according to the directions of such laws as are now in force or shall hereafter be passed in Great Britain for that purpose and to use such proceedings, authorities, punishments and executions upon any offender or offenders who shall be mutinous, seditious, disorderly or any way unruly either at sea or during the time of their abode or residence in any of the ports, harbors or bays of our said Province as the cause shall be found to require according to the martial law in the said directions during the time of war as aforesaid.

Provided that nothing herein contained shall be construed to the enabling you or any by your authority to hold Plea or have any jurisdiction of any offence, cause, matter or thing committed or done upon the high sea or within any of the havens, rivers or creeks of our said Province under your government by any captain, commander, lieutenant, master, officer, seaman, soldier or person whatsoever who shall be in our actual service and pay in or on board any of our ships of War or other vessels, acting by immediate commission or warrant from our commissioners for executing the office of our High Admiral of Great Britain for the time being, under the Seal of our Admiralty, but that such Captain, Commander, Lieutenant, Master, Officers, seamen, soldier or other person so offending shall be left to be proceeded against and tryed as their offences shall require either by Commission under our great Seal of Great Britain as the Statute of the 28th of Henry the Eighth directs or by Commission from our said Commissioners for executing the office of our High Admiral or from our High Admiral of Great Britain for the time being, according to the aforementioned Act for the establishing Articles and orders for the regulating and better Government of His Majesty's navies, ships of War and forces by sea and not otherwise.

Provided nevertheless that all disorders and misdemeanors, committed on shore by any captain, Commander, Lieutenant, master, officer, seaman, soldier or other person whatsoever belonging to any of our ships of War or other vessels, acting by immediate commission or warrant from our said Commissioners for executing the offices of High Admiral or from our High Admiral of Great Britain for the time being under the Seal of Our Admiralty, may be tried and punished according to the laws of the Place where any such disorders, offences and misdemeanors shall be committed on shore notwithstanding such offenders be in our actual service and borne in our pay, on board any such our ships of war or other vessels acting by immediate commission or warrant from our said Commissioners for executing the office of High Admiral or our High Admiral of Great Britain for the time being as aforesaid so as he shall not receive any protection for the avoiding of Justice for such offences committed on shore from any pretence of his being employed in our service at sea.

And our further will and pleasure is that all publick money raised or which shall be raised by any Act hereafter to be made within our said Province be issued out by Warrant from you by and with the advice and consent of the Council and disposed of by you for the support of the Government and not otherwise.

And We do likewise give and grant unto you full power and authority by and with the advice and consent of our said Council to settle and agree with the inhabitants of our Province for such Lands, Tenements, and hereditaments as now are or hereafter shall be in our power to dispose of and them to grant to any Person or Persons upon such terms and under such moderate quit rents, services, acknowledgments to be thereupon reserved unto us as you by and with the advice aforesaid do think fit. Which said grants are to pass and be sealed by our seal of Nova Scotia and being entered upon

record by such officer or officers as shall be appointed thereunto, shall be good and effectual in Law against us, our heirs and successors.

And We do hereby give you the said Edward Cornwallis full power to order and appoint Fairs, Marts and Markets as also such and so many Ports, Harbors, Bays, Havens and other places for convenience and security of shipping and for the better loading and unloading of Goods, Merchandizes as by you with the advice and consent of the said Council as shall be thought fit and necessary.

And we do hereby require and Command all officers and ministers, Civil and Military, and all other Inhabitants of our said Province to be obedient, aiding and assisting unto you the said Edward Cornwallis in the execution of this our Commission and the powers and authorities here contained and in case of your death or absence out of Our said Province to be obedient, aiding and assisting under such person as shall be appointed by us under our Lieutenant Governor or Commander in Chief of our said Province ; To whom we do therefore by these presents give and grant all and singular the Powers and Authority's herein granted to be by him executed and enjoyed during our pleasure or untill your arrival within our said Province.

And if upon your death or absence out of our said Province there be no person upon the place commissionated or appointed by us to be our Lieutenant Governor or Commander in Chief of the said Province, our Will and Pleasure is, that the eldest Councillor who shall be at the time of your death or absence residing within our said Province shall take upon him the administration of the Government and execute our said commission and instructions and the several powers and authorities therein contained in the same manner and to all intents and purposes as either our Governor or Commander in Chief should or ought to do in case of your absence until your return or in all cases untill our further pleasure be known herein.

And we do hereby declare, ordain and appoint that you the said Edward Cornwallis shall and may hold, execute and enjoy the office and place of our Captain General and Governor in Chief in and over our said Province of Nova Scotia, with all its rights, members and appurtenances whatsoever, together with all and singular the Powers and authorities hereby granted unto you for and during our will and pleasure.

In Witness whereof we have cased these our Letters to made Patent, Witness ourself at Westminster, the Sixth day of May, in the Twenty-second year of our reign.

By Writ of Privy Seal.

(Signed) YORKE & YORKE.

APPENDIX D.

PROMINENT BUILDERS OF NOVA SCOTIA.

From Akins's History of Halifax City, pp. 225 et seq.

The following short sketch of some of the persons who took a lead in establishing the Colony, has been compiled chiefly from public records :—

The Honourable Edward Cornwallis, the first Governor and Commander-in-Chief, was a younger son of Charles, third Baron Cornwallis by Lady Charlotte Butler, daughter of Richard, Earl of Arran and uncle to the celebrated Duke of Ormonde. He was born in 1713, was member of Parliament for the borough of Eye in 1749, and was elected member for the city of Westminster in 1753 shortly after he returned from Halifax. He married, the same year, a daughter of the late Lord Townshend, but left no children. He was afterwards raised to the rank of Major General and appointed Governor of Gibraltar. General Cornwallis was twin brother of Dr. Frederick Cornwallis, Archbishop of Canterbury.

The gentlemen who composed the first Council were Paul Mascarene, Edward How, John Gorham, Benjamin Green, John Salisbury and Hugh Davidson.

Col. Mascarene was a native of Castras in the south of France, was born in the year 1684. His parents were Huguenots and were compelled to fly from their native country on the revocation of the Edict of Nantes when all Protestants were driven from France. He made his way to Geneva at the age of 12, where he received his education. He afterwards went to England, where he received a commission in the British army in 1708. He was appointed Captain in 1710 and ordered to America, where he joined the regiment raised in New England for the taking of Port Royal. He was at the capture of Annapolis Royal that year, and was for some time commander of the garrison as senior major of the regiment. On the death of Colonel Armstrong he became Lieutenant-Colonel of the regiment under General Phillips, and was third on the list of councillors in 1720, when the first Council was organized in Nova Scotia. In 1740 he was appointed Lieutenant-Governor of the fort, and administered the government of the Province until the arrival of Cornwallis in 1749. He remained in command at Annapolis after the settlement at Halifax, and was subsequently engaged as agent of the British Government in arranging treaties with the Indians of New England and Acadia in 1751. He retired from active duties and died a Major General in the British army at Boston, on 20th January, 1760. He left a son and daughter. His son was said to be living in New England in 1835, at a very advanced age. The late Judge Foster Hutchinson, of the Supreme Court of Nova Scotia and the late Deputy Commissary General William Handfield Snelling, were his grandsons. His great-grandson, Mr. W. Snelling Stirling, has his portrait, painted by Smybert of Boston about 1725.

Benjamin Green was a native of the province of Massachusetts, born in 1713, youngest son of the Rev. Joseph Green, minister of Salem, Mass., and graduate of Harvard College, He was brought up as a merchant under his elder brother Joseph in Boston. In 1737 he married a daughter of the Hon-

ourable Joseph Pierre of Portsmouth. He accompanied General Pepperrel to Louisbourg in 1745, as Secretary of the expedition. After the capture of that place by the Provincial army, he remained there as Government Secretary and manager of the finances until Cape Breton was restored to the French, when he removed with his family to Halifax, and was appointed to the Council by Governor Cornwallis in July, 1749. After the removal of Mr. Davidson he acted as Secretary of the province. He held several other important public offices, among which were those of Treasurer and Judge of the Court of Vice-Admiralty. On the death of Governor Wilmot in 1766, Mr. Green being then senior councillor, was appointed Administrator of the Government. He died at Halifax in 1772, in the 59th year of his age. His eldest son Benjamin succeeded him as Treasurer of the province. Benjamin Green, junior, was father of Lieutenant William Green of the Navy and Joseph Green and Henry Green of Lawrencetown, the latter left descendants at Lawrencetown. The second son of Governor Green was many years sheriff of Halifax, and having married a Boston lady, afterwards removed to that place. His daughter was married to Mr. Stephen H. Binney, son of Jonathan Binney of Halifax, whose descendants are numerous.

John Salisbury was brother to Dr. Thomas Salisbury, the eminent civil lawyer in London. Lord Halifax was his friend and patron, and sent him out with Governor Cornwallis as one of his suite. He does not appear to have taken any active part in the settlement. He married a Miss Cotton, who brought him a fortune of £10,000, which he spent in extravagance and dissipation. He returned to England in 1753, and died at Offley, the country seat of his relative Sir Thomas Salisbury in 1762. His only daughter was the celebrated Mrs. Thrale, the friend of Dr. Johnson, afterwards married to a Mr. Piozzi. The name is frequently given "Salusbury."

Hugh Davidson also came out with Governor Cornwallis. He was the first Provincial Secretary; he returned to England in 1750 under charges of trading in the supplies and stores for the settlers. Governor Cornwallis in his letters to the Board of Trade, thought him innocent of the main charges made against him.

Captain Edward How was a member of His Majesty's Council at Annapolis in 1744. He was with Colonel Noble at the affair at Minas and Grand Pré in 1747, where he was severely wounded and taken prisoner by the French under DeCorne. He came down from Annapolis with Governor Mascarene in June, 1749, and was sworn in a member of Cornwallis's first council. He was well acquainted with the language of the Indians and their manners, and was sent on a negotiation to the French and Indians at Beaubassin in 1751, where he was treacherously murdered by the enemy, though acting under a flag of truce, having been shot through the back from the bush. The French officers denied having anything to do with this disgraceful affair, and charged it on Mr. LeLoutre, the Indian missionary, who it was said was jealous of Mr. How's influence with the Micmacs. His widow afterwards petitioned the government for pecuniary aid, in consequence of her husband's services, and for money advanced by him for public service. The late Richard W. How, captain in the 81st Regiment, formerly of Halifax, was his grandson.

Colonel John Gorham was a native of Massachusetts; he was with General Pepperrel at the siege of Louisbourg in 1745, as Lieutenant-Colonel of his father's regiment raised in Massachusetts. He afterwards had command of a company of Rangers at Annapolis and came down to Chebucto with his rangers to meet Governor Cornwallis in 1749. He took precedence next to Governor Mascarene at the council board. He is styled Captain Gorham by Mascarene and by Cornwallis in his commissions and correspondence. That of Lieutenant-Colonel was probably militia rank only. It is probable he returned to Boston soon after the settlement was formed as his name does not appear on the council books after 1752. He had a brother, Joseph Gor-

ham, who was also a member of Council in 1766; he afterwards attained the rank of Lieutenant-Colonel in the British army. He was engaged in the border skirmishes on the isthmus from 1754 to about 1758, and was afterwards appointed Commandant at Newfoundland.

Lieutenant-Colonels Horseman, Ellison and Mercer, who were afterwards appointed to the Council, were the officers in command of the regiments which came from Louisbourg. They all retired soon after to England.

Charles Lawrence was a Major in Warburton's Regiment of Infantry. He came up with the army and was engaged during 1749 and '50 in the French wars at Cobequid. He acted as Brigadier General under Amherst at Louisbourg; he was a member of the Council and sworn in Governor of the Province on the death of Governor Hobson; the first assembly was convened during his administration, (2nd October, 1758); he died unmarried on 11th October, 1759, it is said of an inflammation, caused by overheating himself at a ball at Government House; he was deeply respected by the whole community, and the Legislative Assembly caused a monument to be erected to his memory in St. Paul's church "from a grateful sense of the many important services which the Province had received from him during a continued course of zealous and indefatigable endeavours for the public good, and a wise, upright, and disinterested administration." This monument has now disappeared from St. Paul's church. His escutcheon remains in the East Gallery. Lawrence, though an active and zealous governor, by his desire to favour the officers of Government with a partiality for his military friends, brought on himself an organized opposition from the leading inhabitants of the town, who petitioned the Home Government for redress of their grievances, which they in a great measure attributed to the Governor and his Lieutenant Colonel Monckton. His resistance to the desire to call a Legislative Assembly was among the chief charges against him. His death shortly after the petition put an end to the difficulties. He was succeeded by Judge Belcher as Administrator of the Government.

Charles Morris was a native of New England; he was Captain of Provincials under General Pepperrel at the siege of Louisbourg in 1745. He had been engaged by Governor Shirley, of Boston, in a survey of the interior of Nova Scotia with a view to British colonization in 1745. He also commanded one of the Provincial Companies sent to Minas under Colonel Noble in 1747. He was in Halifax in 1749, and in company with Mr. Bruce the Military Engineer laid out the town and peninsula. He was appointed to the Council in 1755. Though Surveyor General of the Province he acted for some time as Judge of the Supreme Court during the time of Chief Justice Belcher, which offices were both afterwards filled by his eldest son Charles. Captain Morris died in 1781, and was succeeded in the office of Surveyor General by his son Charles, whose son, the Hon. Charles Morris, also filled the same office and was a member of Council in 1808. He was the father of John Spry Morris, Esq., afterwards Surveyor General, who was the fourth in succession who had charge of the Surveying Department in Nova Scotia. There are numerous descendants of Captain Morris in Halifax.

Jonathan Belcher, the first Chief Justice, was a native of Massachusetts, son of the Governor of that province, of an eminent colonial family; he was appointed Chief Justice of Nova Scotia in 1754, when a young man, and administered the government on the death of Governor Lawrence; Chief Justice Belcher arranged and revised the laws as they appear on our first Statute Book, and rendered good assistance to Governor Lawrence in founding the settlements at Horton, Cornwallis, Falmouth, &c., in 1758, '9, and 1760. Judge Belcher died poor; the Legislature voted a provision to his only daughter. His son, the Honourable Andrew Belcher, was for many years a resident in Halifax and a member of Council.

Captain Wm. Cotterell was the first Provost Marshal or Sheriff (there

being no county divisions at this time). He was succeeded in that office in 1750 by Captain Foy, who held that situation many years, and received a small pension on his retirement. Mr. Cotterell afterwards acted as assistant Provincial Secretary.

William Nisbett came out with Cornwallis in 1749 as one of the Governor's clerks. He practised as an attorney and solicitor. He was appointed Attorney General on the resignation of Mr. Little, which office he held for 25 years. He was one of the first representatives in the General Assembly of 1758, and was elected speaker on 4th December, 1759. He continued in the Chair of the House (with the intermission of one session when sick) until 1783, when he retired on a small pension and died the following year aged 83. In 1763 he declined a seat in the Council. During the period of his being Speaker, the House sat for 14 years without being dissolved. The old house in which Mr. Nisbett resided situated in Grafton Street, Block letter E, Collins's division, mentioned in a former chapter, still remains, though much changed by the cutting down of the street many years ago. He left no male descendants. His daughter, Mrs. Swann, died in the old Grafton street house about 60 years ago.

Archibald Hinshelwood was one of Governor Cornwallis's clerks, and performed the duties of Deputy Secretary with Mr. Cotterell and others for many years. Most of the drafts of the letters sent to England by the first three Governors are in his handwriting. He was elected a member of Assembly for Lunenburg in 1759 and again in 1765. Lord William Campbell the Governor appointed him to the Council in 1773, but he died before taking his seat. His property on Argyle Street afterwards occupied by the City Water office fell to his nephew, (he having no children), who left two sons in the navy, both of whom died young. The old property was sold about 60 years since and purchased by Mr. W. A. Black, who resided there many years.

Otis Little was Captain of one of the New England Independent Companies. He was probably a native of England. Being in England in 1749, he came out with Governor Cornwallis, who appointed him Commissary of Stores, from which office he was dismissed on suspicion of having traded in the supplies for the settlers. He acted as first Attorney General of the Colony and was probably a lawyer by profession. He was the author of a well-written pamphlet on the resources of Nova Scotia, written in 1748 with a view to encouraging British emigration to the province. Captain Little left a daughter, who died unmarried at Halifax early in the present century.

John Baptiste Moreau, designated gentleman and schoolmaster in the book of the settlers, had been originally a Roman Catholic priest, and Prior of the Abbey of St. Matthew at Breste. He joined the expedition under Cornwallis in 1749, and went to Lunenburg with the settlers in 1752. He received ordination as a clergyman of the Church of England in 1750, and officiated to his countrymen and the Germans in the County of Lunenburg, where he died much esteemed and regretted in the year 1770. He left a son, Cornwallis Moreau, who was the first male child born in Halifax, and was called Cornwallis after the Governor. This old man was living at La Hève, in Lunenburg County, in the year 1848, being nearly 100 years of age. He received pecuniary assistance from the Nova Scotia Philanthropic Society in that year.

Doctor John Breyton came up from Louisbourg with the army, where he had been acting Chaplain to the Forces. He succeeded Mr. Tutty at St. Paul's in 1751 or 1752, in conjunction with Rev. Thomas Wood. Mr. Breynton was inducted Rector in 1758 or '9, under the provisions of the Statutes of the Province, and Mr. Wood acted as Curate or Vicar. After Mr. Wood's removal to Annapolis in 1763, Mr. Joshua Wingate Weeks, from New England, became assistant minister at St. Paul's. Dr. Breynton received his degree of D.D. in 1770. He died in 17—, and was succeeded at St. Paul's, as rector, by the Rev. Doctor Robert Stanser, afterwards Lord Bishop of the Diocese. Dr. Breynton

was esteemed an eloquent preacher, and was in the habit of addressing the settlers in English, French and German.

John Creighton was an officer in the army. He served in the Dragoons at the Battle of Fontenoy. Having been discharged at the peace of Aix la Chapelle, he was placed on half pay as Lieutenant of Warburton's Regiment of Infantry, and came out with the expedition in 1749. Mr. Creighton was sent to Maligash with Colonel Lawrence in 1752 to assist in forming the settlement at Lunenburg, where he continued to reside until his death, which took place in 1807. He was Colonel of the Militia, Judge of the Common Pleas, and for some time a member of His Majesty's Council, to which he was appointed in 1776. Colonel Creighton was a native of the South of England. He left numerous descendants in this country. His youngest son, Colonel Joseph Creighton, half pay of 56th Regiment of Foot, died at Halifax about 1854. His grandson, the Hon. John Creighton, of Lunenburg, was a member of the Legislative Council. Mr. James Creighton, the ancestor of the family of that name now in Halifax, came out with Colonel Creighton. It does not appear there was any relationship between them. Mr. James Creighton became one of the most thriving and influential settlers in the town, and was the ancestor of one of our most numerous and estimable families. Colonel Creighton's daughters married, one to the late Judge Wilkins and another to Hon. Hibbert N. Binney, both of whom have left numerous descendants.

Peregrine Thomas Hopson, the second Governor at Halifax, was Commander-in-Chief at Louisbourg when that place was delivered up to the French after the Treaty of Aix la Chapelle. He came up with the army and was sworn in a member of Council in August, 1749. He succeeded to the government on the resignation of Governor Cornwallis in August, 1753. He did not remain long at Halifax. In 1756 he was gazetted a Major General, and in the following year was appointed to the command of the forces destined for the West Indies. He died before Guadaloupe a short time before the island was captured.

John Collier was a Captain in the army and member of Council in 1752. He was appointed by Governor Cornwallis one of the magistrates of the town, and had command of a section of the militia; one of the divisions of the town being named after him. He died at Halifax in 1769. It is uncertain whether he left any descendants.

Richard Bulkeley accompanied Governor Cornwallis to Nova Scotia as one of his A.D.C. in 1749. He was appointed Secretary of the Province in or about 1759, which office he held until 1793 when, on his retirement, he was succeeded by his son, Michael Freke Bulkeley, who died a few years after his appointment, 1796. Captain Bulkeley was called to His Majesty's Council in 1759, and as Senior Councillor, he administered the government on the death of Governor Parr, in 1791. He held, at various times, the offices of Judge of Admiralty, Brigadier General of Militia, and Grand Master of the Masons. He died December 7th, 1800, at the age of 83, beloved and respected by all classes throughout the province. He was justly esteemed the father of the settlement, being the only person of consideration then living who came in 1749. He had been twice married. His first wife was a daughter of Captain Rouse, R.N.; she died in 1775. He had three sons all of whom died before him. His residence was at the corner of Prince and Argyle Streets, opposite the southwest corner of St. Paul's church. The old stone house built by him still remains; and it was for many years the residence of the late Hon. H. H. Cogswell, and is now known as the Carlton House. Mr. Bulkeley was buried under St. Paul's church. His escutcheon, with the bull's head crest, hangs in the west gallery. The Hon. Richard Bulkeley was the only person who ever held the rank of General of Militia in this country.

Captain Horatio Gates was A.D.C. to Governor Cornwallis with Captain Bulkeley. He had been in command of an independent company of provin-

cials in New York in the year 1737. After his arrival in Halifax he was employed for a short time in the country against the Indians and French. In 1762 he was appointed A.D.C. to General Monckton, with the rank of Major, and accompanied him in the expedition against Martinique. Gates was afterwards better known as a General in the American Revolutionary Army. Sir Robert Walpole, in a letter dated 1778, says Gates was the son of a housekeeper of the Duke of Leeds. Sir Robert was his god-father.

Jonathan Binney was a native of Hull, a small village near Boston. He came to Halifax shortly after the settlement was formed, and was engaged in business. He was elected a member of Assembly for the town in 1761, and in 1764 was elected to the Council. In 1768 he was sent to the Island of St. John (now Prince Edward Island) as Second Judge of the Local Court, and afterwards held the offices of Collector of the Revenue at Canso and Collector of Imports and Excise at St. John Island. He was charged with errors in his accounts by Mr. Legge, the Governor of the province, under which he went to England in 1776, where he completely refuted the charges made against him. Mr. Binney married Hannah, daughter of Mr. Henry Newton, a member of Council, and is the ancestor of the whole Binney family now in Nova Scotia.

Joseph Fairbanks was from Massachusetts. He was one of the representatives in the first House of Assembly, summoned in 1758. Mr. Fairbanks left no children. His nephew, the late Rufus Fairbanks, became heir to all his property in Halifax, which at the time of his death was very considerable. Mr. Rufus Fairbanks was for many years one of the magistrates of Halifax; he married a daughter of Charles Prescott, sister to the Hon. Charles Prescott, of Cornwallis, and was the father of the Hon. John E. Fairbanks, of the firm of Fairbanks & McNab, of Hon. Charles R. Fairbanks, many years a member of Assembly for Halifax and Judge of Admiralty and Master of the Rolls, and of Samuel P. Fairbanks, formerly member for Queen's County, with other children.

Benjamin and Joseph Gerrish were both from New England, The former was a member of His Majesty's Council, appointed in 1768, and Agent for Indian Affairs in 1760. The latter was many years Naval Storekeeper at Halifax. He was also a member of Council. His appointment to the board bears date August 16th, 1759, from which he was suspended in 1762 for non-attendance. He died at Halifax in 1774. Mr. Joseph Gerrish built a residence in the north suburbs, south of the dockyard, between Lockman and Water Streets, and had a fruit garden, the old stone wall of which remained on the east side of Lockman Street until about 1835. One of these gentlemen carried on business for some years in company with Mr. Gray, who was connected with him by marriage. Mr. Gray was father of the late Rev. Dr. Benjamin Gerrish Gray, minister of St. George's, and afterwards Rector of Trinity, St. John, New Brunswick, who was succeeded by his son, the Rev. Dr. William Gray, lately deceased. He was also ancestor of Mr. Charles Gray, British Consul at Virginia. The Hon. John Gray, of St. John, New Brunswick, and Benjamin Gerrish Gray, Esq., barrister at law, of Halifax, are their descendants; one the son of Mr. Charles Gray, the other of Dr. William Gray. A Mr. John Gray came out with Governor Cornwallis in 1749 as a Deputy Secretary; probably Mr. Gray who was in partnership with Gerrish was the same person.

Major Leonard Lochman, (spelt wrongfully Lockman), was a German doctor and practised his profession in early life. He came out with the settlers in 1749 and resided in the north suburbs, where he built a residence for himself and had a large garden. This old house was lately pulled down. It stood on the upper side of Lockman Street and was built with a hipped or gamble roof. He received the rank of Major in the army for services per-

formed to the British Government. He died at Halifax, and was buried under the little old Dutch Church, in Brunswick Street, where his escutcheon and monument with armorial bearings are still to be seen. The street between Brunswick Street and the water, which was laid out between the German lots, was named Lockman Street in compliment to the Major, who was for many years a leading man in Dutchtown. It is not known whether he left any descendants in the province.

The names of Jonathan Prescott, Malachi Salter, Richard Gibbons, Lewis Piers and Otto William Schwartz appear among the principal inhabitants of the town in 1750. Mr. Salter was from New England, had been extensively engaged in the fishery, and had visited Chebucto Harbour in 1744, five years before the settlement, while on a fishing voyage along the coast. Chebucto was the frequent resort of Cape Cod and Marblehead fishermen previous to the settlement. He was a member of Assembly and Justice of the Peace for the town in 1759. The old house at the corner of Salter and Hollis Streets, afterwards the residence of the Hon. W. Lawson, and later of Mr. Esson, was built by Mr. Salter and was his place of residence for many years. During the American revolt, Mr. Salter, with several other gentlemen of the town, became suspected of treasonable correspondence. He was twice under prosecution, but on a full investigation nothing appeared to have been said or written by him of sufficient moment to warrant the charges. Mr. Salter was the ancestor of the family of that name now remaining in Halifax. He died at Halifax, in January, 1781, aged 65.

Mr. Gibbons was acting Attorney General for several years, and a leading practitioner at the bar of Halifax. His son, Richard Gibbons, died at Sydney, Cape Breton, at an advanced age, where his descendants are numerous. The old gamble-roofed house at the corner of Buckingham and Grafton Streets, known as Isles's corner, lately pulled down, was the residence of Mr. Gibbons.

John Duport was the English attorney. He came out with the settlers in June, 1749, and in July following was appointed a Justice of the Peace. In 1752 he was made Judge of the Inferior Court of Common Pleas. He performed the duties of Secretary of Council for many years. He was sent as a Judge to St. John's Island in 1770, and was afterwards Chief Justice of the Island. Mr. Duport left a daughter married to Mr. P. Skey, of Falmouth, and a son who was in the army and was father of Mr. Robert Duport, later an officer in the Purveyor's Department of the British Army. Judge Duport was much esteemed, and appears to have been an active public servant during the first twenty years of the settlement.

Joshua Mauger was an English trader, who had been connected with the government contracts at Louisbourg, and appears to have resided in Halifax for the purpose of commerce only. In 1751 he held the office of Agent Victualler for the navy at Halifax. In 1754 he had shops established at Pisiquid, (Windsor), Minas, (Horton), and other places, where he sold goods and spirits to the French and Indians. He had still houses in Halifax where he made rum which he supplied to the troops and the navy. Mr. Mauger had some difficulties with Governor Cornwallis regarding illicit dealing. He went back to England about 1761, and was appointed Agent of the Province in London, which he resigned in the following year, having secured a seat in the British Parliament. He owned much property in and about Halifax. The beach at the entrance of the harbour, extending westerly from Cornwallis, now McNab's Island, was originally granted to Mr. Mauger, and still bears his name.

Michael Franklin was a merchant from England who settled in Halifax about 1752 or 1753. He was elected a member of Assembly in 1759, and appointed to His Majesty's Council in 1762. In 1766 he received the appointment of Lieutenant-Governor of the Province, which he held until 1776, when he again took his seat at the Council Board. Governor Franklin was a most

active and esteemed public officer. His name appears connected with almost all the transactions of importance which occurred in the town from 1763 to 1780. During the American Revolt, his exertions in support of British authority while administering the government, were in a great measure instrumental in preserving the tranquillity of the province. He married a daughter of Mr. Boteneau. of Boston, whose wife was a daughter of Peter Faneuil of that city. He left several children. The late James Boteneau Franklin, for many years Clerk of the House of Assembly, was his eldest son. Mrs. Fitzgerald Uniacke was his grand-daughter.

Lewis Piers was a grand-son of Sir Henry Piers, 1st Bart. of Tristernagh Abbey, Ireland.

The Hon. Thomas Saul was the wealthiest and most enterprising merchant from 1749 to 1760.

The names of Benjamin Gerrish, Charles King, Henry Ferguson, Joseph Fairbanks, William Piggot, William Fury, James Grant, Jacob Hurd, Daniel Shatford, Samuel Sellon, Charles Mason, Lewis Piers and Robert Campbell appear on the lists of the Grand Jury between 1751 and 1754.

The following names appear on the register of early settlers :—Richard Wenman, Thomas Keys, John Edes, John Gosbee, Ralph Coulston, Edward Orpen, John Christopher, Laurilliard, Philip Knaut, Peter Burgman, Otto William Schwartz, John Jacob Preper, John Woodin, Andrew Wellner, Christopher Preper, Simon Thoroughgood.

APPENDIX E.

GOVERNOR LAWRENCE'S PROCLAMATION OF 1758 TO INDUCE SETTLEMENT IN NOVA SCOTIA.

From Haliburton's "History of Nova Scotia," Vol. I., p. 219.

At the same time that His Excellency convened the Legislature (in 1758), he invited people from the old colonies to settle upon the lands which had become vacant by the removal of the Acadians. In addition to the instructions which he gave to the agent, in Boston, he issued a proclamation in which he declared that he was ready to receive any proposals that might be made to him for settling this valuable tract of country "one hundred thousand acres of which had produced wheat, rye, barley, oats, hemp, flax, &c., without failure for the last century; and another one hundred thousand had been cleared and stocked with English grass, planted with orchards and embellished with gardens, the whole so intermixed that every individual farmer might have a proportionable quantity of ploughed land, grass land and wood land." In consequence of this flattering but faithful description, there were several emigrations of agriculturists from New England, and agents were sent to the Province to make terms with the Governor, and report to their employers the encouragement likely to be given to persons desirous of removing thither.

As this proclamation was silent upon every subject, but that of the quality of the land, His Excellency was required to state in explicit terms, the nature of the constitution, the protection to be afforded to the civil and religious liberties of the subject, and the extent of the elective franchise of the people. He therefore issued another, explanatory of the terms upon which the Province was to be settled, which, as it contains the solemn assurances of Government upon these subjects, is justly regarded as a most important state paper and has not inaptly been styled the Charter of Nova Scotia :—

"By His Excellency Charles Lawrence, Esq., Captain General and Governor-in-Chief, in and over His Majesty's Province of Nova Scotia, or Acadia, in America, Vice Admiral of the same, &c., &c.

"Whereas, since the issuing of the proclamation dated the 12th day of Oct., 1758, relative to settling the vacant lands in this Province, I have been informed by Thomas Hancock, Esq., agent for the affairs of Nova Scotia at Boston, that sundry applications have been made to him in consequence thereof, by persons who are desirous of settling the said lands, and of knowing what particular encouragement the Government will give them, whether any allowance of provisions will be given at their first settlement, what quantity of land will be given to each person, what quit-rents they are to pay, what the constitution of the Government is, whether any, and what taxes are to be paid, and whether they will be allowed the free exercise of their religion ? I have therefore thought fit, with the advice of His Majesty's Council, to issue this proclamation, hereby declaring, in answer to the said enquiries, that, by His Majesty's royal instructions I am empowered to make grants on the following proportions :—That townships are to consist of one hundred thousand acres of land, that they do include the best and most profitable land, and also that they do comprehend such rivers as may be at or near such settlement, and do extend as far up into the country as con-

veniently may be, taking in a necessary part of the sea coast. That the quantities of land granted will be in proportion to the abilities of the planter to settle, cultivate and enclose the same. That one hundred acres of wild wood land will be allowed to every person being master or mistress of a family, for himself or herself, and fifty acres for every white or black man, woman or child, of which such person's family shall consist at the actual time of making the grant, subject to the payment of a quit-rent of one shilling sterling per annum, for every fifty acres; such quit-rent to commence at the expiration of ten years from the date of each grant, and to be paid for His Majesty's use to his Receiver General, at Halifax, or to his Deputy on the spot.

"That the grantees will be obliged by their said grants to plant, cultivate, improve or enclose, one-third part of their lands within the space of ten years, another third part within the space of twenty years, and the remaining third part within the space of thirty years, from the date of their grants. That no one person can possess more than one thousand acres by grant, on his or their own name.

"That every grantee, upon giving proof that he or she has fulfilled the terms and conditions of his or her grant, shall be entitled to another grant, in the proportion and upon the conditions above mentioned. That the Government of Nova Scotia is constituted like those of the neighbouring colonies; the Legislature consisting of a Governor, Council and House of Assembly, and every township, as soon as it shall consist of fifty families, will be entitled to send two representatives to the General Assembly. The Courts of Justice are also constituted in like manner with those of the Massachusetts, Connecticut and the other northern colonies. That as to the article of religion, full liberty of conscience, both of His Majesty's Royal instructions and a late act of the General Assembly of this Province, is secured to persons of all persuasions, Papists excepted, as may more fully appear by the following abstract of the said act, viz.:—Protestants dissenting from the Church of England, whether they be Calvinists, Lutherans, Quakers, or under what denomination soever, shall have free liberty of conscience, and may erect and build meeting houses, for public worship, and may choose and elect ministers for the carrying on divine service and administration of the sacrament, according to their several opinions, and all contracts made between their ministers and congregations, for the support of their ministry, are hereby declared valid, and shall have their full force and effect according to the tenor and conditions thereof, and all such Dissenters shall be excused from any rates or taxes, to be made or levied for the support of the Established Church of England.

"That no taxes have hitherto been laid upon His Majesty's subjects within this Province, nor are there any fees of office taken upon issuing the grants of land.

"That I am not authorized to offer any bounty of provisions: and I do hereby declare that I am ready to lay out the lands and make grants immediately, under the conditions above described, and to receive and transmit to the Lords Commissioners for Trade and Plantations, in order that the same may be laid before His Majesty for his approbation, such further proposals as may be offered by any body of people, for settling an entire township, under other conditions that they may conceive more advantageous to the undertakers.

"That forts are established in the neighbourhood of the lands proposed to be settled, and are garrisoned by His Majesty's troops, with a view of giving all manner of aid and protection to the settlers, if hereafter there should be need.—Given in the Council Chamber at Halifax, this 11th day of January, 1759, in the 32d year of His Majesty's reign.

(Signed) "CHARLES LAWRENCE."

APPENDIX F.

Extract from "A General Return of the several Townships in the Province of Nova Scotia, the first day of January, 1767."

Nos. of the Townships.	NAMES OF THE TOWNSHIPS.	NUMBERS IN EACH FAMILY. Males. Whites. Men.	Males. Whites. Boys.	Males. Indians. Men.	Males. Indians. Boys.	Males. Negroes. Men.	Males. Negroes. Boys.	Females. Whites. Women.	Females. Whites. Girls.	Females. Indians. Women.	Females. Indians. Girls.	Females. Negroes. Women.	Females. Negroes. Girls.	Total Persons in each Township.	Religion. Protestant.	Religion. Roman Catholic.	Country. English	Country. Scotch.	Country. Irish.	Country. Americans.	Country. German and other Foreign	Country. Acadians.
1	Amherst	33	35	.....	.....	.....	.....	18	37	.....	.....	.....	.....	123	123	.....	3	2	85	29	.....	4
2	Annapolis	103	159	.....	.....	1	2	99	146	.....	.....	2	1	513	445	68	40	8	20	370	8	67
3	Barrington	76	129	2	1	.....	.....	69	98	1	.....	.....	.....	376	376	.....	10	.....	1	365	.....	.....
4	Blandford	41	19	.....	.....	.....	.....	19	16	.....	.....	.....	.....	95	72	23	62	.....	22	11	.....	.....
5	Breton, Island of	270	141	.....	.....	2	1	128	161	.....	.....	2	2	707	287	420	70	6	169	170	21	271
6	Canso	266	100	.....	.....	.....	1	72	79	.....	.....	.....	1	519	243	276	130	7	112	73	.....	197
7	Chester	76	54		.....	.....	.....	51	49	.....	.....	1	.....	231	227	4	17	17	11	176	11	.....
8	Cornwallis	170	202	.....	1	2	2	169	176	1	1	1	2	727	723	4	15	8	2	697	1	4
9	Cumberland	98	92	.....	.....	.....		75	69	.....	.....	.....	.....	334	325	9	19	6	28	269	5	7
10	Dartmouth	19	7	.....	.....	1	.....	11	1	.....	.....	.....	.....	39	30	9	13	.....	9	8	9	.....
11	Dublin	35	25	.....		.....	.....	24	23		.....	.....	.....	107	103	4	10	3	11	60	23	.....
12	Falmouth	89	46	.....	.....	2	1	88	65	.....	.....	1	.....	292	250	42	10	2	20	200	18	42
13	Granville	106	102	.....	.....	1	1	89	81	.....	.....	2	1	383	383	.....	10	6	7	350	10	.....
14	Halifax and its environs	1124	574	.....	.....	20	10	752	518	.....	.....	15	9	3022	2355	667	582	52	878	1351	264	295
15	Hopewell	46	33	9	4	2	.....	31	26	4	3	1	.....	159	116	43	2	.....	12	62	59	24
16	Horton	137	203	.....	.....	1	.....	113	179	.....	.....	1	.....	634	634	.....	.....	.....	2	617	15	.....
17	Lawrence Town	7	2	.....		1	.....	4	1	.....	.....	.....	.....	15	12	3	4	1	5	5	.....	.....
18	Liverpool	136	188	.....	1	2	.....	126	159	.....	.....	2	.....	634	628	6	9	7	16	594	6	2
19	Londonderry	41	31	.....	.....	.....	.....	44	32	.....	.....	.....	.....	148	148	.....	4	4	130	10	.....	.....
20	Lunenburg	340	416	.....	.....	1	.....	294	416	.....	.....	1	.....	1468	1464	4	13	4	9	25	1417	.....
21	Maugerville	77	72			.....	.....	46	65	.....	.....	.....	1	261	261	.....	6	4	10	235	6	.....
22	Monckton	12	22		.....	.....	.....	9	17	.....	.....	.....	.....	60	60	.....	.....	.....	4	7	49	.....
23	Newport	58	66	.....	.....	.....	.....	48	105	.....	.....	1	1	279	277	2	4	15	17	242	1	.....
24	Onslow	89	47	.....	.....	.....	.....	63	46	.....	.....	.....	.....	245	245	.....	4	4	100	137	.....	.....
25	Sackville	107	74	.....	.....	.....	.....	72	96	.....	.....	.....	.....	349	349	.....	.....	1	5	343	.....	.....
26	St. John's, Island of	266	100	.....	.....	.....	1	72	79	.....	.....	.....	1	519	243	276	130	7	112	70	3	197
27	Truro	92	69	.....	.....	.....	.....	80	60	.....	.....	.....	.....	301	301	.....	.....	.....	301	.....	.....	.....
28	Wilmot	12	10	.....	.....	.....	.....	9	9	.....	.....	.....	.....	40	40	.....		.....	21	19	.....	.....
29	Windsor	88	48	.....	.....	.....	.....	60	47	.....	.....	.....	.....	243	100	143	10	.....	60	48	15	110
30	Yarmouth	78	131	.....	.....	.....	.....	67	103	.....	.....	.....	.....	379	379	.....	15	3	5	351	5	.....
	Omitted.—Merimichi, St. John's River and Cape Sable.	53	37	.....	.....	.....	.....	40	42	.....	.....	.....	.....	172	29	143	.....	6	6	20	.....	140
	TOTALS	4165	3234	11	7	36	19	2842	3001	6	4	39	19	13374	11228	2146	912	173	2165	6913	1946	1265

* Estimate on an average of the whole (Halifax excepted) for those places who made no returns of Births, Deaths, Arrivals and leaving the Province.

Increased by Births, deducting deaths 433

" " Arrivals 375

Total increase in 1766, Souls 808

HALIFAX, N.S., 16th December, 1767

A true return,

MICH. FRANKLIN,

Lieut.-Governor,

APPENDIX G.

ESTABLISHMENT OF REPRESENTATIVE INSTITUTIONS IN NOVA SCOTIA.

From Akins's "Selections from the Public Documents of the Province of Nova Scotia."

At a Council holden at the Governor's House in Halifax on Saturday the 20th May, 1758.

PRESENT—

HIS EXCELLENCY THE GOVERNOR,

THE LIEUT. GOVERNOR,

JOHN BELCHER, JNO. COLLIER, MONTAGUE WILMOT,	Councs.	BENJ. GREEN, ROBT. GRANT, CHAS. MORRIS.

His Excellency having communicated to the Council an extract of a Letter to him from their Lordships of the Board of Trade dated February 7th, 1758, relative to the plan framed by the Governor and Council on the 3rd day of January, 1757, and transmitted to their Lordships by the Governor for carrying into Execution His Majesty's instructions upon calling General Assemblies within the Province, signifying their Lordships' approbation of the same in General, with some few alterations which being considered the Council came to the following Resolution thereon, vizt., That the said plan with the amendments proposed by their Lordships shall be forthwith carried into Execution and published in form as follows, vizt.:—

His Excellency the Governor, together with His Majesty's Council, having had under mature consideration, the necessary and most expedient measures for carrying into execution those parts of His Majesty's commission and Instruction which relate to the calling of General Assemblies within the Province, came to the following Resolution thereon, vizt.,

That a House of Representatives of the inhabitants of this Province be the Civil Legislature thereof in conjunction with His Majesty's Governor or Commander in Chief for the time being, and His Majesty's Council of the said Province. The first House to be elected and convened in the following manner, and to be styled the General Assembly, vizt.,

That there shall be elected for the Province at large until the same be divided into counties, Sixteen Members, for the Township of Halifax Four, for the Township of Lunenburg Two.

That until the said Township can be more particularly described the limits thereof shall be deemed to be as follows, vizt.,

That the Township of Halifax comprehend all the lands lying southerly of a line extending from the Westernmost Head of Bedford Basin across to the northeasterly head of St. Margaret's Bay, with all the islands nearest to said lands, together with the islands called Cornwallis's, Webb's, and Rous's Islands.

That the Township of Lunenburg comprehend all the lands between La Have River and the easternmost Head of Mahone Bay. With all the Islands within said Bay and all the islands within Mirliguash Bay, and those islands lying to the southwards of the above limits.

That when fifty qualified electors shall be settled at Pisiquid, Minas, Cobequid or any other township which may hereafter be erected, each of the said Townships so settled shall, for the encouragement be entitled to send two Representatives to the General Assembly and shall likewise have a right of voting in the Election of Representatives for the Province at Large.

That the House shall always consist of at least eleven Members present besides the speaker, before they enter upon business.

That no person shall be chosen as a member of the said House or shall have a right of voting in the Election of any Member of the said House who shall be a Popish Recusant, or shall be under the age of twenty-one years or who shall not at the time of such election be possessed in his own Right of a Freehold Estate within the District for which he shall be elected, or shall so vote, nor shall any elector have more than one Vote for each Member to be chosen for the Province at large or for any Township and that each Freeholder present at such election when giving his Vote for one Member for the Province at large shall be obliged to vote also for the other eleven.

That respecting Freeholds which may have been conveyed by the Sheriff by virtue of an Execution, the right of Voting shall remain and be in the persons from whom the same were taken in Execution until the time of redemption be elapsed.

That no non-commissioned officer or Private Soldier in actual Service shall have a right of voting, by virtue of any dwelling built upon sufferance, nor any possession of Freehold, unless the same be registered to him. That all the electors shall, if so required at the time of the election, take the usual State Oaths appointed by Law, and declare and subscribe the test.

That any Voter shall at the request of any Candidate be obliged to take the following Oath, which Oath together with the State Oaths, the returning Officer is hereby empowered to administer.

"I, A. B., do swear that I am a Freeholder in the Township of , in the Province of Nova Scotia, and have Freehold Lands or hereditaments lying or being at , within the said Township, and that such Freehold Estates hath not been made or granted to me fraudulently on purpose to qualify me to give my vote, and that I have not received or had by myself or any person whatsoever in Trust for me or for my use and benefit, directly or indirectly, any sum or sums of money, office, place or employment, gift or reward, or any promise or security for any money, office, employment or gift in order to give my vote at this election, and that I have not before been polled at this election and that the Place of my abode is at ."

That a precept be issued by His Excellency the Governor to the Provost Marshal or Sheriff of the Province requiring him by himself or his deputies to summon the Freeholders of the Province to meet within their respective districts, at some convenient place and time, to be by the said Provost Marshal or one of his Deputies appointed, and of which he or they shall give Twenty days' notice, then and there to elect (Agreeable to the regulations hereby prescribed) such a number of representatives as shall in the said precept be expressed, agreeable to the preceding detail.

That on account of the present rigorous season the precept for convening the first Assembly be made returnable in Sixty days from the date thereof, at which time the Assembly shall meet at such place as His Excellency the Governor shall appoint in the Precept.

That the Provost Marshal or his Deputy shall be the returning officer of the elections to be held by him with the Assistance of three of the Freeholders present to be appointed and sworn by the returning officer for that

purpose, and in case a scrutiny shall be demanded, the same shall be made by them, and in case of further contest the same to be determined by the House. The Poll for each township to be closed at the expiration of Forty-eight hours from the time of its being opened and for the Province at large the Poll, after four days from the time of its being opened for the election, shall be sealed up by the returning officer for each Township and transmitted to the Provost Marshal by the first opportunity, that seasonable notice may be given to the persons who shall upon examination appear to have been chosen by the greatest number of the said votes. Provided, nevertheless, that if the votes in the Townships of Annapolis Royal and Cumberland for the first members of the Province at large, shall not be returned Eight days before the expiration of the time limited for returning the Precept, the Provost Marshal shall in such case proceed to declare who are the persons elected, from the other votes in his hands.

That the Provost Marshal or his Deputy shall appoint for each candidate, such one person as shall be nominated to him by each candidate, to be inspectors of the returning officer and his assistants.

That no person shall be deemed duly elected who shall not have the vote of the majority of the electors present.

That the names of all persons voted for, together with names of the Voters, shall at the time of voting, be publicly declared and entered on a Book kept for that Purpose.

That in case of the absence of any of the Members from the Province for the term of two months, it shall and may be lawful for the Governor, Lieut. Governor or Commander-in-Chief (if he shall judge it necessary) to issue his Precept for the choice of others in their stead.

That the Returning Officer shall cause the foregoing Resolution to be publicly read at the opening of each meeting for the Elections and to govern the said Meetings agreeable thereto.

CHAS. LAWRENCE.

JNO. DUPORT, Sec., Conc.

Extract from a letter of Govr. Lawrence to Lords of Trade dated,

HALIFAX, 26 December, 1758.

I have now the honour to acquaint your Lordships that the Assembly met according to appointment on the 2nd of October and passed a number of laws, a list of which are enclosed and I have reason to hope from their proceedings hitherto that we shall get through the whole business in good time and with less altercation than (from the seeming disposition of the people) I was heretofore apprehensive of. Whenever the session is closed I shall take particular care that your Lordships have fair copies of the Laws at large, under the seal of the Province as directed by His Majesty's instructions together with transcripts of the Journal and proceedings of the Council and Assembly during their session.

VOTES OF THE HOUSE OF ASSEMBLY.

PROVINCE OF NOVA SCOTIA.

HALIFAX, Monday, October 2nd, 1758.

Joseph Gerrish,*	Esquires.	Robert Campbell,	Gentlemen.
Robert Sanderson,		William Pantree,	
Henry Newton,		Joseph Fairbanks,§	
William Foye,		Phillip Hammond,	
William Nesbitt,		John Fillis,	
Joseph Rundel,		Lambert Folkers,	
Jonathan Binney,†	Genten.	Philip Knaut,	
Henry Ferguson,		William Best,	
George Suckling,		Alexander Kedie,	
John Burbidge,‡			

Met at the Court House pursuant to a summons from the Provost Marshal acquainting them that they were duly elected and chose William Nesbitt, Henry Newton and Joseph Rundel to wait on the Governor with a message that they were assembled at the Court House and were ready to enter on business. And they were answered that he would send down two members of the Council to swear them. Accordingly the Hon. Benjamin Green and Charles Morris, Esqurs., came to the Court House and administered the oaths to the aforenamed, and they all made and subscribed the Declaration, after which the House received a message that His Excellency would meet the Assembly at his own House pursuant to which they waited on His Excellency who was then in Council when he directed them to proceed to the choice of a Speaker, upon which they went down and chose Robert Sanderson, Esq., for their Speaker, and returned to acquaint His Excellency therewith, who approved of the choice they had made and was pleased to make the following speech :—

"Gentlemen of the Council and House of Representatives :—His Majesty having been most graciously pleased by His Royal Instructions to his Governors of this Province to direct the calling and assembly of the Freeholders to act in conjunction with his Governors and Council as the Legislative authority when such a measure should be found essential to his service.

I am to assure you that it is with particular pleasure I now meet you convened in that capacity in consequence of a plan sometime since formed here for that purpose with the advice and assistance of His Majesty's Council, and my me transmitted to the Lords, Commissioners for Trade and Plantations to be laid before His Majesty for his approbation.

Gentlemen of the House of Representatives :—I entertain the most sanguine hopes that you are come together unanimously disposed to promote the service of the Crown, or in other words the real welfare and prosperity of the people whom you have the honour to represent in every point to the utmost of your authority and capacity. This I presume you will conceive is justly to be expected not only from the immediate regard due to the civil rights and interest of your constituents but likewise from the unspeakable obligations you are under to demonstrate in their behalf your dutiful sense of His Majesty's paternal concern for the prosperity and security of these his Subjects in those distinguishing marks of his Royal Favour and protec-

* See Appendix D.

† See Appendix D.

‡ Col. Burbidge afterwards settled in King's County.

§ Great uncle of the late Hon. John Fairbanks, the late Hon. Judge Fairbanks, and W. B. Fairbanks and Saml. P. Fairbanks, Esquires, of Halifax.

tion which we have from time to time so happily experienced in the fleets and armies sent out for our immediate preservation when we were under the most imminent danger of being swallowed up by a merciless enemy, also in the ample supplies of Money for so many years annually granted for the support and encouragement of this infant Colony and moreover still in the continuance of His Majesty's Royal Bounty for that purpose when from the seeming inclination of the inhabitants to have an Assembly convened some time since, it might have been presumed and indeed by an article of His Majesty's Instructions (which I shall order to be laid before you) it has been judged that the Colony was become capable for providing necessary support of Government here as has been usual in all His Majesty's other American Dominions.

Gentlemen of both Houses,—As my military occupation requires my attendance as early as possible upon the Commander in Chief of the Forces to the Westward and as the Lieutenant Governor is now necessarily employed and will be for some time to come upon an enterprise of importance in a distant part of the province, there is not at present an opportunity of entering upon such particulars as might otherwise call for your attention, I am therefore earnestly to Recommend, to your serious consideration the expediency or rather necessity of unanimity and dispatch in the confirmation of such acts or resolutions of a Legislative nature, as the Governors and Council under His Majesty's Royal Instructions have found expedient before the forming of an Assembly and indispensably necessary for promoting the welfare and peaceable Government of this people.

You may depend upon it Gentlemen on my return to the Government you will find me perfectly disposed to concur with you in enacting such further laws, making such amendments to the present ones and establishing such other Regulations as shall appear upon more mature deliberation to be consistent with the Honor and Dignity of the Crown and conducive to the lasting Happiness of His Majesty's subjects where I have the honor to preside."

CHAS. LAWRENCE.

The House went down and proceeded to the choice of Officers and voted Mr. David Lloyd be clerk of the Assembly.

Voted that William Reynolds be door-keeper and have Five shillings a day for his attendance.

Voted that John Callbeck be Messenger to the House and have Three shillings a day for his attendance.

The question being put whether any money should be voted to the members of the House for their service during the present session, unanimously resolved in the negative, and that they would all serve without reward this session.

A motion being made by Mr. Suckling for leave to bring in a Bill to establish the authority of the House.

Voted, that Mr. Suckling bring in the Bill on Wednesday morning.

Voted that committee, vizt. Mr. Nesbit, Mr. Newton, Mr. Gerrish, Mr. Foye and Mr. Burbidge should prepare an address in answer to His Excellency's Speech by Ten o'clock to-morrow morning.

Then adjourned till to-morrow morning ten o'clock.

Tuesday, October 3rd, 1758.

The committee appointed to prepare an address in answer to His Excellency's Speech reported to the House that they had prepared the same, which being read was approved of.

Voted that a message be sent by a Committee to desire His Excellency will be pleased to order that all the Resolutions of His Majesty's Governors and Council heretofore made and passed, may be laid before the House, and also the collection of the English Statutes.

The Clerk of the Council came down with a Message from His Excellency, that he was ready to receive any message from the Assembly.

A committee, vizt., Mr. Gerrish, Mr. Newton, and Mr. Suckling were directed to carry a message to His Excellency, that the House is ready to attend him with an Address, To which His Excellency answered that he was ready to receive it, which being reported they accordingly waited upon His Excellency with their address which was read by Mr. Speaker as follows :—

TO HIS EXCELLENCY CHAS. LAWRENCE, Esquire, Captain General and Governor in Chief in and over His Majesty's province of Nova Scotia or Acadia in America, Vice Admiral of the same, Etc., Etc.

The Humble address of the House of Representatives met in General Assembly.

"MAY IT PLEASE YOUR EXCELLENCY,—

We His Majesty's most Dutiful and Loyal Subjects of the House of Representatives, having taken into consideration your Excellency's Speech delivered upon the opening the first General Assembly, beg leave to return Your Excellency our thanks for the particular pleasure you express in meeting us convened as Representatives of the Freeholders of this Province to act in conjunction with His Majesty's Governor in Council as the Legislative Authority.

We assure Your Excellency that we are come together unanimously disposed to promote the service of the Crown, and the real welfare and prosperity of the people whom we represent, in every point to the utmost of our authority and capacity, which we conceive may justly be expected from us, not only from the immediate regard due to the Civil rights and interests of our Constituents, but likewise from the unspeakable obligation we are under to demonstrate in their behalf our dutiful sense of His Majesty's paternal concern for the prosperity and security of His Subjects in general ; and for the many distinguishing marks of His Royal favor, protection and bounty to this infant Colony in particular having so happily experienced the same in the means directed by His Majesty for our immediate preservation when we were under the most eminent Danger of being swallowed up by a most merciless enemy, also for the ample supplies of money for many years annually granted for the support and encouragement of this infant colony, and not only in the continuance of His Majesty's Royal Bounty for that purpose but also for the Happiness and prosperity which we conceive will with the blessing of the Almighty flow from His Majesty's Royal Favor to this Infant Colony in directing the calling a General Assembly within the same from minds deeply impressed with a sense of the greatest loyalty and gratitude to the best of kings, everything may justly be expected to answer His Majesty's Royal intentions in directing the calling of a General Assembly in this Province which the present low circumstances of the Colony and our authority and capacity are able to provide.

We beg leave to assure Your Excellency in particular that it is a great concern to us that your military occupation requires your attendance so soon upon the Commander in Chief to the Westward, as the Lieut. Governor is necessarily absent in a distant part of this Province ; we are fully sensible of the great necessity of a due consideration of such acts or Resolutions of a Legislative nature as the Governors and Councils under His Majesty's Royal Instructions have found expedient before the forming an Assembly. The work is great and will of course take up much time to digest into due

method to answer your Excellency's intentions in recommending the same to our speedy consideration, but in the meanwhile we shall as well in that as in everything else that may require our consideration (with your Excellency's assistance) disinterestedly endeavor to promote the welfare and peaceable government of His Majesty's people in this province and the future ease and assistance of your Excellency, and we doubt not on your Excellency's return to the Government we shall find you perfectly disposed to concur with us in enacting such further laws and establishing such other regulations as shall appear upon more mature deliberations to be consistent with the honor and dignity of the Crown and conducive to the lasting happiness of His Majesty's subjects of this Province."

ROBERT SANDERSON, Speaker.

After which His Excellency acquainted the House that he would return his answer to-morrow morning.

Then adjourned till to-morrow morning Ten o'clock.

THE SECOND SESSION.

Wednesday, August 1st, 1759.

A Quorum of the House having met agreeable to the prorogation the Clerk of the Council attended with a message from His Excellency that he was in the Chair and directed the attendance of the House who attending accordingly he was pleased to direct them to proceed to the choice of a speaker which they did and chose William Nesbitt, Esquire, and immediately attended His Excellency with their Speaker who being presented was approved of by His Excellency who was pleased to make the following speech :—

" Gentlemen of the Council and House of Representatives :

Your remarkable zeal and attention to the true interest and prosperity of the Province in the business of the last long session give me the strongest assurances of your coming together again with dispositions that cannot fail to afford the public and me the highest satisfaction.

In the course of that Session you got through almost everything essentially necessary of a legislative nature and of consequence there can be but little remaining to be done at this season, when your private avocations but ill admit of your attendance upon the publick service. The most material points that seem to call for your consideration under the present circumstances of the Province are a provision for maintaining the Light House erecting on Cape Sambro, and the establishing such rules and regulations as may be necessary in conducting and managing the affairs of the Work House.

And as overseers are appointed for taking care of the poor, I conceive in order to render them of any use in their office, some provision should be thought of for enabling them to give relief and assistance to such objects of compassion as must perish without it ; how far the state of our finances may encourage the consideration of a measure so laudable and expedient, it is not easy to form any tolerable conjecture, unless it could be ascertained what demands will probably be made on the Treasury under the promises of the Publick for exciting labor and industry ; but I fear there is too much reason to apprehend from the inconsiderable amount of the sums collected upon the different Duties since October last that if the bounties upon industry be demanded in a degree that it were to be wished they may, the Funds will prove far from more than sufficient for answering the several purposes to which they have been appropriated. I cannot therefore refrain from recom-

mending to you gentlemen, in the most earnest manner the resumption of a bill under your consideration last session, making liable to the present Duty all spirituous liquors retailed in any quantities under fifteen gallons; such a bill I am well informed would greatly improve our circumstances, be a further check upon vice and debauchery (in my opinion) stand unexceptionable in every publick light whatever; if upon the revival of it you should find yourselves of the same opinion I make no doubt of its taking place as I can have no room to suppose there are any amongst us so sordid as to sacrifice publick benefit to private views of personal advantage.

You have a most pleasing and flattering prospect now before you, Gentlemen, this seems to be the cressis for putting the Province into a flourishing and happy state. The town of Halifax surprisingly improved of late increases daily in wealth and numbers. Very extensive tracts of the vacated lands on the banks of the Bay of Fundy have been lately granted away to industrious and substantial farmers, applications for more are crowding in upon me faster than I can prepare the Grants, and I make no doubt but that the well peopling of the whole will keep pace with our warmest and most rapid wishes. The establishment of a yard in this excellent Harbor is a matter of the highest advantage and importance to us, and if His Majesty's arms in North America be blessed with that success this Summer which all appearances are big with at present, the progress made in the Province of Nova Scotia during one year will exceed the growth of half a century in the most boasted of His Majesty's American Dominions.

Let me entreat you therefore Gentlemen of the House of Representatives to make despatch in the Business before you, to conduct it with mildness and unanimity and to record nothing in your Journals which can serve only to tarnish the credit of your proceedings.

If anything for advancing the happiness of the people should present itself to your consideration which has escaped my notice, you may be assured of my ready concurrence with you in the prosecution of it, that I shall adhere strictly to every proposal and join heartily in every measure to promote the publick welfare and in that the lasting honor and reputation of the Legislature."

RESOLVED, That a Committee be appointed to answer His Excellency's Speech.

RESOLVED, That for the future the Assembly meet at the Court House.

Then adjourned till to-morrow morning ten o'clock.

SECOND ASSEMBLY, 1st Session. } VOTES OF THE HOUSE OF ASSEMBLY.

Province of Nova Scotia,

Halifax, Tuesday, December 4th, 1759.

List of Members returned by the Provost Marshal.

William Nesbitt, Esq.,	Capt. Charles Proctor,	Erasmus Jas. Philips, Esq.,
Henry Newton, Esq.,	Mr. Michael Franklin,	John Newton, Esq.,
Malachy Salter,*	Mr. Archibald Hinshelwood,	Winckworth Tonge, Esq.,
Mr. Jonathan Binney,	Sabastine Zouberbuhler, Esq.,†	Capt. Simon Slocomb,
Mr. John Burbidge,	Mr. Philiip Knaut,	Col. Joseph Fry,
Mr. Benjamin Gerrish,	Col. Jonathan Hoar,	John Huston, Esq.
Joseph Scott, Esq.,	Mr. Isaac Deschamps,	

A Quorum of the House being met a Committee waited on His Excellency the Governor to acquaint him therewith and that they were ready to proceed

* Mr. Salter was a native of New England. See Appendix D.

† Afterwards a member of Council.

on business. The Committee having returned acquainted the members that His Excellency desired that they would attend him at the Council Chamber to be qualified which being done His Excellency signified to the House that they should proceed to the choice of a Speaker, the Members then returned chose William Nesbitt, Esq., and presented him to His Excellency who approved of their choice.

Mr. Speaker then prayed His Excellency that the members of the Assembly might have their usual privilege, to which His Excellency answered that he would allow the House all such privileges as His Majesty's Instructions would permit.

Then His Excellency was pleased to make the following speech :

"Gentlemen of the Council and House of Representatives,—I embrace this pleasing opportunity of our first meeting to congratulate you on the universal success with which it has pleased the Almighty to bless His Majesty's Arms by sea and land, in this year of His most Glorious Reign : but as we are more immediately interested in these events of the conquest that have been made in the northern countries of this Continent, I would more especially rejoice with you upon the victory of that ever memorable day which (by Divine permission) through the wise perseverance and active vigor of His Majesty's Admirals and Generals, seconded by the matchless intrepidity of their followers, justly rebuked the pride of France and put His Majesty in possession of that barbarous metropolis from whence his good subjects of this Province and of the King's other American Dominions have groaned under such continual and unpardonable wrongs. It is not to be doubted but that this blow will soon be rendered so fatal to the insolence of Canada by the unwearied zeal vigilance and activity of our first Deliverer General Amherst as will put a final period to those interruptions the Enemy have too successfully thrown in the way of our progress in every part of this province as well as to the monstrous cruelties they have hitherto exercised with impunity over the British American Empire in peace and in war without distinction.

This, Gentlemen, is the important change we have all along look'd and wished for, and for which I am persuaded our spirited and Nobleminded Countrymen by sea and land, Regulars and Provincials, who performed the work, will have our latest and sincerest acknowledgments with the prayers of our children's children : This I say is the crisis we have eagerly but justly panted after and which thank Heaven our most Gracious and August Sovereign has outlived his labors to be happy in.

Under these circumstances and with the enlivening prospect that is before us of introducing so many hundreds of youthful settlers into the Colony as are now preparing to Establish the vacated and other Lands we may form to ourselves the strongest assurance that if we rightly improve the opportunity, we cannot fail to be as much an object of envy as we were before of compassion. I persuade myself, gentlemen, that on your parts nothing will be wanting that may contribute towards it, on my own, I can only renew those engagements which I entered into with many of you as members of the Houses before.

In the meantime the Gentlemen of the House of Representatives as I see more reason than ever for doing it I must here repeat my recommendation of the Bill for laying a Duty on Spirituous Liquors retailed in any quantities under Fifteen gallons, it was rejected by the late Assembly upon considerations I will not enter into ; but as I flatter myself no such motives will influence the conduct of the present Assembly, I make no doubt of your seeing it in a very different light and passing it ; because it cannot but be of Publick utility.

I must likewise recommend to your consideration the framing some amendment to the second and third clauses to the act Concerning Marriages and Divorce, the inconveniency of them as they now stand are too obvious to need being pointed out and I am of opinion likewise that upon perusal of the first clause of the Act for establishing Religious Publick worship you will perceive its insufficiency for effectually answering the end of such an act.

These, Gentlemen, are the matters that have occurred to me as necessary to be laid before you ; any Bills you shall prepare you may depend upon it will have their due weight with me, for I can have no other standard for the regulation of my conduct than the Duty I owe to my Sovereign in my ambition to see you a very happy people a very flourishing and a very considerable people."

The House then went down to the Assembly Room.

The oaths of Allegiance were taken by the House and the members present subscribed the Declaration.

Resolved that the office of Clerk to the Assembly be executed by a member or members of the House.

Voted, that Mr. Hinshelwood and Mr. Deschamps be joint clerks to the House.

Voted that John Callbeck be Messenger and Doorkeeper to the House.

Rsolved that a Committee, vizt., William Nesbitt, Esq., Mr. Hinshelwood and Henry Newton, Esq., Malachy Salter, Esq., and Mr. Franklin, do prepare an address in answer to His Excellency's speech by to-morrow morning.

Then adjourned till to-morrow morning Ten o'clock.

Wednesday the 5th of December, 1759.

The Committee appointed to prepare an address in answer to His Excellency's Speech reported to the House that they had prepared the same which being read was approved of.

A message was sent by a Committee to acquaint His Excellency that the House is ready to attend him with their address ; to which His Excellency answered that he was ready to receive them which being reported the House accordingly waited on His Excellency with an address which was read by Mr. Speaker as follows :—

TO HIS EXCELLENCY

Charles Lawrence, Esq., Captain General and Governor in and over His Majesty's Province of Nova Scotia or Acadie, Vice Admiral of the same, etc., etc.

May it please your Excellency,—

We His Majesty's most dutiful and loyal subjects, the representatives of this Province, return your Excellency our sincere and Hearty thanks for your speech delivered from the Chair. It is with inexpressible joy that we reflect on the glorious and successful events that have attended His Majesty's arms under God, and the vigilance and good conduct of our Admirals and Generals in all parts of the world, but more especially in North America and it is with infinite pleasure we foresee the great honor, dignity and advantage that will accrue therefrom to His Majesty's sacred person, his Crown and his Dominions. And we have the most sanguine hopes from the experienced great abilities of our worthy Commander in Chief, General Amherst, and from the known valor and intrepidity of the troops, as well regular as provincials under his command, that he will be able soon to finish the glorious work he has begun by entirely subduing the pride and insolance of France in the compleat

reduction of Canada, the mother and nurse of the most cruel, savage enemies to these his Majesty's American Colonies.

It is with pleasure we embrace this occasion of expressing the grateful sense we have of your Excellency's paternal care in the wise and prudent steps taken to engage such great numbers of substantial and reputable Protestant families from the neighboring Colonies to settle on the vacated and other lands of this province which your Excellency has been enabled to effect by rightly improving the favorable opportunity which the success of his Majesty's arms has afforded the consequence whereof must throw the highest lustre upon your Excellency's administration and cannot fail speedily to render this a rich and flourishing Colony. On our part we beg leave to assure you, Sir, that as we have no doubt of the rectitude of your measures no assistance in our power shall be wanting to strengthen your hands in the conducting so great and laudable an undertaking.

We shall take into our immediate consideration the matters recommended by your Excellency as first necessary to be done upon this session and we shall in these as in all other Cases, pay the highest regard to whatever your Excellency may propose to us for the welfare and prosperity of this province which under the happy influence of your wise administration we hope to see the real barrier, as well as the envy of our most opulent neighbors."

His Excellency acquainted the House that he would return his answer on Friday morning.

Then adjourned till to-morrow morning Ten o'clock.

APPENDIX H.

STATE OF NOVA SCOTIA IN 1783-84.

From Colonel Morse's Report on Nova Scotia in 1783-84 (See Report on Canadian Archives for 1884.)

The extent of this Province,[1] beginning, as before, with the Peninsula, from the north-east to the south-west, the greatest length, is about 225 miles ; and the greatest breadth, which is nearly north and south about 75 miles, containing, by calculation, 16,271 square miles. There are, in different parts of the Province, about 36,000 acres of cleared up lands, and 24,000 acres of marsh land diked in, making together about 60,000 acres under cultivation. The extent and contents of that part lying on the Continent, cannot be ascertained with the same precision till the boundaries are better established. There may be about 27,000 square miles, making the whole contents of the Province upwards of 43,000 square miles.

The old inhabitants, whom I shall first name, separately from the disbanded troops and loyalists, which have come since the late war, are computed at about fourteen thousand, exclusive of Acadians and Indians. Of the former, who are the remains of the old French inhabitants, and are dispersed all over the Province, there are about one hundred families ; of the latter about three hundred men of the tribe of Mickmacks, the original Indian of the Peninsula ; and upon the rivers St. John and the Scodiac about one hundred and forty men of the tribe of Mareshites ; but as I could not obtain such information upon this head as I wish, the computation may not be strictly correct. Before I proceed to give the number of the disbanded troops and loyalists, it may not be improper to observe that a great part of the old inhabitants, especially the wealthy ones, are from New England, and that they discovered, during the late war, the same sentiments which prevailed in that country. I think it necessary to add that the Legislature is principally composed of these men, and that some of the higher public offices are at present filled with the most notorious of such characters.

The number of new inhabitants, viz., the disbanded troops and loyalists who came into this Province since the peace, I shall be able to give with precision, the whole having been mustered in the summer of 1784, in order to ascertain the number entitled to the Royal bounty of provisions. The following Return will not only show the number of men, women and children, but the different parts of the Province in which they are settling, and here I am sorry to add that a very small proportion, indeed, of these people are yet upon their lands, owing to different causes—First—their arriving very late in the season. Secondly—timely provision not having been made by escheating and laying out lands, in which great delays and irregularities have happened. Thirdly—a sufficient number of surveyors not having been employed, but lastly and principally, the want of foresight and wisdom to make necessary arrangements, and steadiness to carry them into execution, the evils arising from which will be felt for a long time to come, not only by the individuals, but by Government, for if these poor people who, from want of land to cultivate and raise a subsistence to themselves, are not fed by Government for a considerable time longer, they must perish. They have no other country to go to—no other asylum. They have hitherto been mostly employed in building towns at the principal settlements. At Port Roseway and the mouth of the River St. John, astonishing towns have been raised, and in less time, perhaps, than was ever known in any country

[1] The province then included New Brunswick.

before. It is, however, much to be lamented such great exertions had not been more profitably directed in cultivating their lands, for besides loss of time, they have wasted their substance in that which can never prove profitable to themselves of useful to the country.

Return of the Disbanded Troops and Loyalists Settling in the Province of Nova Scotia, Mustered in the Summer of 1784.

Where Settling.	When Mustered.	Men.	Women.	Children above 10 Years.	Children under 10 Years.	Servants.	Total.
About Halifax Harbour	July 13	27	15	.....	6	.....	48
Dartmouth	do 14	175	104	68	92	41	480
Musquadobbin	May 28	10	4	.....	2	.....	16
Jedore	July 17	7	5	8	6	.....	26
Ship Harbour	June 2	77	25	28	19	2	151
Sheet do	do 5	71	21	7	18	5	122
Country do	do 13	201	26	7	14	41	289
Chedebucto	do 21	580	204	68	139	62	1,053
Island Saint John	do 12	202	60	27	65	26	380
Antigonish	July 12	76	12	8	6	18	120
Pictou and Merrigonish	do 26	192	65	27	40	.....	324
Cumberland, etc	June 28	257	160	186	232	21	856
Partridge Island	.....	38	26	31	24	69	188
Cornwallis and Horton	June 4	91	37	44	27	38	237
Newport and Kenticook	May 27	150	60	28	47	22	307
Windsor	do 20	127	49	23	58	21	278
Windsor Road and Sackville	July 8	52	26	23	26	3	130
Annapolis Royal, etc.	June 24	608	349	325	318	230	1,830
Bear River	do 25	71	18	3	14	9	115
Digby	May 29	483	240	216	204	152	1,295
Gulliver's Hole, St. Mary's Bay	June 6	53	26	50	31	13	173
Nine Mile River	July 19	38	17	6	6	5	72
Chester Road	do 27	16	6	1	4	1	28
Pasamaquody	.....	833	304	340	310	.....	1,787
River St. John	.....	4,131	1,619	1,630	1,439	441	9,260
At Halifax, being the widows and children of Loyalists and soldiers, and other objects of charity	.....	90	39	46	29	4	208
Between Halifax and Shelburne	.....	326	149	51	120	8	651
Shelburne	.....	3,401	1,823	1,420	1,279	.....	7,923
Total	.....	12,383	5,486	4,671	4,575	1,232	28,347

An abstract of the number of inhabitants will stand thus, viz. :—

Of Old British Inhabitants	14,000
Of Old French or Acadians, One Hundred Families at four a Family	400
Of Disbanded Troops and Loyalists which are called New Inhabitants	28,347
Total	42,747

The Indians are not enumerated, or can they be considered as making any part of the community.

This Return includes the Negroes, whose numbers are about 3,000, but as they have not been distinguished from the other Loyalists I cannot give their number with precision.

APPENDIX I.

SPEECH OF HON. J. W. JOHNSTON IN THE HOUSE OF ASSEMBLY OF NOVA SCOTIA ON THE 10TH FEBRUARY, 1854, ON THE UNION OF THE BRITISH NORTH AMERICAN PROVINCES.

The following correspondence, which precedes the Speech in question, sets forth the circumstances under which it was republished in pamphlet form in 1865 at Halifax.

Sir,—The "Union League" have considered that it might be of benefit, under the present circumstances of the country, to publish a speech delivered by you in 1854 on the subject of a Union of the Colonies; but they do not feel at liberty to do so without your concurrence, as your sentiments may have undergone change since that period—in which case the re-publication might not be agreeable to you. I have the honour to be, your obedient servant,

P. S. HAMILTON, Acting Secretary.

To His Honour the Judge in Equity.

Halifax, March 2, 1865.

My Dear Sir,—I have to acknowledge the receipt of a note from you, in which, as acting Secretary of the Union League, you inform me that they think it might be of benefit under the present circumstances of the country to publish a speech delivered by me in 1854, on the subject of "Union of the Colonies," but do not feel themselves at liberty to do so without my concurrence, as my sentiments may have undergone change since that period,—in which case the re-publication might not be agreeable to me.

The scheme for the Confederation of the British North American Provinces offers to their Legislatures a question of supreme importance, standing apart from party issues, and transcending temporary interests. In relation to such a subject I see no occasion to hesitate in saying that my sentiments, as expressed in the speech delivered in 1854, have not been essentially changed, and that the re-publication will give me pleasure, if it will promote in any degree a measure so necessary as the Union of the Provinces.

Previously to that year, Canadian gentlemen had deliberated on Confederation, but the subject had not (so far as I know) been distinctly presented to any Provincial Legislature.

Under the influence of a long cherished belief that union was indispensable, if the British North American Colonies were to furnish a country where British people should attain a position and occupy a field of action essential to the expansion and elevation of political communities, I introduced the resolutions which the speech prefaced, with the purpose of keeping the important consideration before the public and engaging attention to it in our sister colonies not less than in this province. In 1857 the subject was brought under the notice of the Colonial Secretary in London, by Mr. Archibald and

myself, under the authority of the Provincial Government, and for several years past it has, in varied forms, been presented to public notice in the Legislature and the press and on the platform in most of the Provinces, by leading public men without distinction. And it is a source of highest gratification that, after the long period since Lord Durham propounded the Union of these Colonies, that policy should meet the approval of the Imperial Government; and that a Minister of the British Cabinet should, in Parliament, now use in allusion to the present scheme of Confederation, and those who advocate it, such language as this :—

"They have conceived a noble ambition; they have designed to form, I venture to say, a nation, but not a nation divided from the allegiance they owe to the British throne, nor separated from the institutions under which it is their pride to live; nor estranged from the associations and attachments that bind them to the Mother Country. In a spirit of the most fervent loyalty to the British throne, in a close attachment to the British Crown, and in devotion to British institutions they have desired to form all the North American Provinces on the eastern coast into one great Confederation."

In judging of the probability of a Union of all the Provinces being consummated the obstacle which ever seemed most formidable, was the indifference that might be expected, on the part of Canada, to unite with communities much feebler than herself. Hence the Union of the Maritime Provinces was an object that appeared (though probably without reason) more easily attainable. It was a measure valuable in itself, but was not the fulfilment of all the requirements of the case; for this the combination of the whole was requisite.

The apprehended indifference of Canada has been removed in a very striking and unexpected manner; but so far from seeing reason for prejudice against the measure, because Canada seeks Union from an appreciation of its benefits to herself, that fact would seem to be an element of strength in the compact.

Were this letter to be silent on the comparative schemes of legislative and confederate union, my sentiments would be liable to misapprehension, because in 1854 I expressed a strong preference for the former; but it will be seen that the resolutions then submitted, by leaving the choice between the two plans open for deliberation, excluded the idea that Legislative Union was deemed *sine qua non*. The reasons which, in 1854, induced my preference for this form of Union, have lost none of their force; although I may not then have given quite as much consideration to the obstacles to its accomplishment as I have, since the question has come practically more near. Then, however, the necessity of supplying some mode for meeting the wants of the country, more convenient than legislation in a distant parliament, was felt; and it will be remembered that I introduced about the same time for this purpose a Bill for the municipal incorporation of the counties, carefully elaborated from the best precedents I could procure. Its fortunes were inauspicious. The Legislature gave it but a dubious existence, making its operations dependent on acceptance by the counties. The counties courteously declined the boon of self-government it proffered; half a county alone accepted the gift, and after a few years rejected it.

Thus, unacceptable proved a measure which is essential should the perfect political amalgamation of the Provinces be effected; and it is probable that greater obstacles would be found opposed to Legislative than to Confederate Union. But if, after Confederation, the Legislatures of the several Provinces should deem a closer connection desirable, the way would be as open then as now.

At present, however, the alternative is not before us. It is known that Legislative Union is impossible, and the comparison between the two systems is without object. The choice offered to the Legislature of the Province is :—

On the one hand :—

Union under one government, giving to British subjects in their confederate and growing strength a nationality worthy of their origin, and a theatre of action such as national expansion demands ; where—acknowledging the sovereignty—maintaining the institutions—cultivating and perpetuating the principles of the parent state—and putting forth the energies of free men, they and their descendants may, under a gracious Providence, have the opportunity of rising to degrees of political influence, material prosperity, intellectual and literary attainment, religious, educational and moral progress and refinement of taste and manners which cannot be reached in small and contracted communities.

On the other hand is :—

The perpetuation of the present isolated condition of the province ; and rich as she is in material benefits and prosperous within the limits which small communities may attain, yet few in numbers, weak in strength, unequal to the development of her own resources, unable to furnish to her sons professional education, or to retain at home her enterprising youth, she has little prospect for the future beyond a dwarfed existence and ultimate absorption into the neighbouring republic.

One of these must be chosen, the other rejected. There is no other alternative. My sentiments formed and publicly advocated through a quarter of a century, leave me no room for deliberation now. To an old man, individually, any decision is of small moment ; but as a member of the community, in the exercise of my best judgment, on a question of vital interest to all of us and those who come after, I dare not deny a national existence with its privileges and duties to my descendants and my countrymen.

I therefore accept Confederation as a great benefit, whatever my tendencies in favor of Legislative Union, and though they were greater and more fixed than they are.

There is another point requiring explanation in connection with the republication of my speech.

The example of the United States was urged by me in '54 as strongly illustrative of the advantages of Confederation. The civil war that has since arisen has been supposed to afford an argument in the opposite direction ; but, as I think, without reason. If history can teach anything, no lesson is more plain than that taught by the great contrast between the imbecility of the United States, after their independencee was acknowledged and the bond was dissolved that during the war had held them together, and their wonderful progress and power after the constitution was adopted by which they were united.

That after three-quarters of a century, when thirteen States had increased to thirty and three, and four millions of people had grown to thirty millions, a powerful section possessing individually and extensive powers of State Legislation should desire separation, was quite within the operation of human passion and interests ; and if it was necessary to meet this desire with cannon balls then the civil war might be an argument against all confederations. But a peaceful separation might have taken place ; two prosperous states might have occupied the place held by one before ; and in a few years the parent state, renewed by natural increase and foreign accessions, have been prepared to give off—when the necessity arose—as it almost inevitably will arise—fresh offshoots, and become a mother of nations. The system of confederation would then have proved itself adapted for progression such as the world had never seen, and adapted equally, when reason and justice demanded it, for contraction. It must not, therefore, be charged with consequences which forbearance and a regard for justice and equal rights would have averted ; and we may hope that if in distant time a great confederate

nation of Britons should be placed in like circumstances, better regulated dispositions and the warning lessons of this terrible civil war stamped on the page of history may lead to the happiest result of peaceful adjustment, and the formation of new states.

The delegates have, I think, improved on the American model in the distribution of legislative powers, between the general and local governments.

It being my purpose to do little more than make such explanations as the republication of my speech requires to prevent my being misunderstood, the details of the plan are not within the purpose of this letter. I may, however, say that, as far as I can judge, the scheme propounded manifests an earnest desire, with no small measure of success, to secure solidity and endurance to the constitution and harmony in its action and to do impartial justice among the constituent members, and I sensibly feel that the delegates have well earned the praise for moderation, forethought and ability in a case of great complication, delicacy and difficulty which has been freely accorded to them by the British Government, and in leading journals in England. It would not be surprising that some of the details should be liable to criticism or to improvement. It would be surprising were it otherwise—the most perfect plan would not commend itself alike to all minds, and no plan can be perfect when diversified interests, prejudices, feelings and judgments require to be accommodated and harmonized.

In a case of such momentous and enduring importance, it is well for each one, before touching the details, to settle firmly in his mind the great question—Isolation or Confederation. If Confederation be thought beneficial, then the details will be considered in relation to the importance of the object to be attained, and the difficulties adjusting conflicting views. Matters temporary, or comparatively inferior, or that may be subsequently adjusted, or that must be sacrificed for the sake of attaining the object, will not be allowed to disturb the judgment; and finally, it is a great security that the whole will undergo the scrutiny and revision of sagacious and far-seeing statesmen in England having no interest but the public good, aided by the local knowledge of able colonial public men. This is no small affair, the influences of which will die away with the excitement of its discussion—no thing of petty politics, reaching no farther than personal interests—no matter of party strife. Our country and its destinies, our descendants and their future, are the subjects —and the consideration should be approached with an earnestness, and the decision made under a sense of responsibility not to be exceeded in the most solemn religious duty. I am, dear sir, very truly yours,

J. W. JOHNSTON.

To P. S. Hamilton, Esq., Chief Commissioner of Mines, &c.

Address on the Union of the Colonies, delivered in the House of Assembly, February 10th, 1854.

Hon. J. W. Johnston said: Mr. Chairman, before availing myself of the privilege with which the House has indulged me of expressing my views on the Union of the British North American Colonies, permit me to read the Resolutions I propose to move.

I do this, Sir, that at the outset it may be seen to be my desire that the Imperial and Colonial Governments should be drawn to consider the great question, and to mould it after full deliberation into some form fit to be presented for the consideration of the several Legislatures; and that I presume not at this stage of the enquiry to offer any specific scheme of my own.

The resolutions are as follows :—

Resolved, That the Union or Confederation of the British provinces on just principles, while calculated to perpetuate their connection with the Parent State, will promote their advancement and prosperity, increase their strength and influence, and elevate their position.

Resolved, That His Excellency the Lieutenant-Governor by address be respectfully requested to make known to Her Majesty the Queen, and to the Governments of the sister Provinces of Canada, New Brunswick and Prince Edward Island, this opinion, and the desire of the House to promote the object ; and that His Excellency by correspondence with the Imperial and Provincial Governments, and by all means in His Excellency's power urge and facilitate the consideration of a measure, which, if matured on principles satisfactory to the several Provinces and calculated to secure their harmony, and bring into action their consolidated strength, must result in lasting benefits of incalculable value.

Mr. Chairman, if the desire to improve his circumstances and raise his condition be a sentiment natural to a man having under proper control beneficial effects upon the race—the same principle when applied to national elevation must rise to a higher order, and become a duty of greater obligation just as the object is freer from selfishness and the benefits are more extensive and more enduring.

That the dispositions and tendencies of nations are moulded and directed by their Government and institutions, is a truth which reason approves and nature confirms. Yet national characteristics being but the concentration of the prevailing propensities of individuals they become the reflex of each other, and alike derive tone and complexion from the habits of thought and feeling and action engendered by the laws.

I do not forget that religion is the great minister—the effective agent in the amelioration of man and the exaltation of nations. Yet do her influences, like rays of light passing from one medium into another, fall more or less directly and powerfully according to the moral atmosphere that surrounds the subjects of her action.

But, Sir, I freely admit that the obligations resulting from these truths are controlled by a duty no less plain—which forbid needless alterations in the Government and laws. The occasions which call for fundamental changes should be grave, and the conclusions sought, free from reasonable doubt.

If, therefore, a view of the condition and prospects of the British North American Provinces does not justify the conviction that in all their relations, political and material, social and moral—their union is called for, or at least is a measure demanding deliberate examination, then, Sir, the objects for which I solicit the favour of the Committee are unwise and ought to be rejected promptly and decisively. But if the condition and the prospects of these Colonies do force that conviction, then it is the duty of every man according to his influence and ability to be an instrument in urging the accomplishment of their union.

This is a question that reaches beyond the present moment and oversteps the boundaries of sectional claims. Not that I would be taken to mean that the palpable interests of the present are to be sacrificed to the visions of a distant and uncertain future ; or any rights, however, small, disregarded for the sake of theory and speculation. No, Sir, the future of these Colonies that we have especially to deal with, is that which the shadows of the past distinctly pourtray ; and which the analogies of nature, and the testimony of experience with clearness reveal ; the interests to be sacrificed, if there shall be such are those that shall be compensated by larger benefits and greater good.

The adage that "Union is Strength," and the homily illustrative of that adage in the bundle of sticks lie at the foundation of the proposal before the Committee,—the beginning,—the middle and the end of the argument.

Hence they who oppose the measure should rightly assume the burden of sustaining their views—unless there be something in the nature, situation and circumstances of the several parties to be amalgamated, unsuited for effective union.

If nothing be found to show that the Provinces are unsuited for union, then the way is clear for the question ; and the comparison will present itself between :—

The Provinces severed and dis-united ; and

The Provinces combined and one.

In the preliminary enquiry, the obstacles to union, arising from distance, dissimilarity of race and habits—the difference in their public debt—opposing interests of trade and revenue—geographical obstructions—seem the most obvious and serious.

The impediments resulting from distance and from the unhappy circumstances of both the Canadas, at the time, were chiefly felt by Lord Durham in 1837 when the subject was discussed at Quebec by that distinguished and acute statesman and his able advisers—among whom were the late Charles Buller and Mr. Turton ; and the delegates attending from the Provinces.

These impediments have passed away. Since that time railroads have been introduced into Canada, and the time I believe will not be long before the works of the Grand Trunk Railroad Company will unite Sarnia, on Lake Huron, with River du Loup, on the banks of the St. Lawrence, below Quebec.

I hold in my hand a prospectus and plan of the vast undertakings of that company.

Behold here their lines of railways—running a distance of 1,100 miles, and traversing the whole extent of Canada, by an unbroken line, and with an almost undeviating course, bringing the distant Huron nearly to the border of New Brunswick.

Still shorter will be the time that will suffice to show St. John connected by the iron road with Shediac. For this we have the high authority of Sir Edmund Head in his opening speech to the Legislature of New Brunswick, and I assume as an inevitable concomitant of the Union a continuation of the railroad from River du Loup to Halifax. Thus Montreal, situated not very far from a central position, will be but a few days' journey from the extremest points of the Provincial lines.

Since 1837 the almost magic power of the electric telegraph has been called into use, to annihilate time and distance in the communication of thought and intelligence ; and thus the objection from the distances that separate the inhabitants of these Provinces no longer offers any sound reason against their Union.

The condition of Upper and Lower Canada was in 1837 unable for Union,

Both Provinces still heaving and agitated under the effects of recent troubles, and divided into parties embittered by a struggle of no ordinary character, were in a condition the worst imaginable for adjusting a new constitution, or carrying a Union into operation.

Besides—differences in language, laws, habits and modes of thinking and feeling—and the rivalry naturally growing out of these differences, placed an obstacle in the way of the Union of Lower Canada with the Upper or the Lower Provinces, which in the nature of things, is the most difficult to be overcome.

This barrier was not sufficient to prevent the amalgamation of the Canadas, and the successful result of that measure not only proves adequately that no dissimilarity that exists in the habits and feelings of different sections of the population of the various Provinces, is a just reason against entertaining the question of their Union, but affords encouragement to its extension to the other Provinces.

The geographical relations of the Colonies can, I think, be no hindrance.

The line separating Canada and New Brunswick creates no separation between the people inhabiting on either side. The Canadian inhabitants there have long found it to their advantage to deal principally with New Brunswick, and to avail themselves of the conveniences afforded by that fine river, the St. John.

The people of New Brunswick and Nova Scotia (once united in the same Province) know no distinction.

Some of the finest portions of Nova Scotia,—Cumberland, Digby, Annapolis, parts of Kings, Hants and Colchester,—are more closely united by business relations with New Brunswick than with any part of their own Province, —while the north-eastern coast of that Province,—with resources of great value, derived alike from the land and the water, are drawn by the facilities of navigation to Halifax rather than to St. John.

The Gulf of St. Lawrence brings us all together. There Canada, New Brunswick, Prince Edward Island, Nova Scotia and Cape Breton and Newfoundland unite in encircling the estuary of the great river of the north, and there as to a common centre, the traders from all the Colonies are every season brought together.

The hindrance to a Union which probably will be found the most difficult of removal will result from real or supposed differences of interest in relation to the regulation of commerce and tariff. But if arrangements of this nature necessary for the common good, should oppose in some particulars the policy of a portion of the Union, it may well be supposed that more than compensation will be found in the advantage of a uniform system, embracing all the Colonies, and conferring on each the privileges and benefits of unfettered intercommunion which at present is not and cannot easily, be enjoyed.

It does not, however, appear to be necessary or expedient to deal at large with this question now. If, on general and enlarged views, a Union be desirable or necessary, I cannot but think that all such questions will be found capable of a solution consonant with the general welfare—and besides they require to be brought into definite form after interchange of opinion and discussion among the several governments, before they can be practically dealt with in open debate in the Legislature.

The same remarks are applicable to the present disparity in the liabilities of the several Provinces, which I have made in reference to the disparity in the rates of their several tariffs, and supposed differences of commercial policy.

The debt of Canada is very large—but the works for which it was incurred remain—and her abundant revenues, after meeting the expenses of Government—the interest of her debt—the contingent of her sinking fund—and liberal allowance for education and other objects of public benefit—leave still a large surplus.

Lord Elgin's despatch, of the 16th August last, states the net revenue of 1852 to be greater than the expenditure including interest on public debt and sinking fund, by $188,553. Gentlemen may see the statistics at large, in the very useful compilation I have in my hand—Mr. Scobie's Canadian Almanac for the present year.

But, Sir, when I reflect on the immense resources of Canada, I apprehend the obstructions to the Union may arise from measures very different from the fastidiousness of the Lower Colonies, in view of the Canadian debt.

Let us then assume that if a Union of the British North American Provinces be a measure calculated to consolidate their strength—improve their institutions—accelerate their progress and promote their well-being—there exists no insuperable objection to that Union—either in the distance that separates—the diversities of races and of habits and sentiments—from geographical impediments, or financial or fiscal difficulties, or other causes of an individual nature.

This places us on the broad field of enquiry to which the subject invites. The difficulties are to select and arrange the materials within a reasonable compass, rather than to find matter for observation.

The Union of the Colonies of Great Britain in North America is a familiar idea, of which their history before and after the Revolution furnishes many instances.

As early as 1643 occurred the Confederation of the New England Colonies, and it is not uninstructive to notice the causes and motives of that Union—by which, to use the language of the day, the Colonies of New England were "made all as one." Bancroft, from whom I quote, says:—"Protection against the encroachment of the French and Dutch—security against the savages—the liberty of the gospel in peace, were the motives of the confederacy."

The Union embraced Massachusetts, Plymouth, Connecticut and New Haven. Its affairs were conducted by Commissioners, two from each Colony, irrespective of their size or population. The Commissioners, who were to meet annually, or oftener if necessary, might deliberate on all things which are "the proper concomitants or consequents of a confederation." Peace and war and especially Indian affairs, exclusively belonging to them—they were authorized to make internal improvements at the common charge, and they were the guardians to see equal and speedy justice given to all the confederates. The common expenses were to be assessed according to the population. But the Commissioners were in reality little more than a deliberative body; they possessed no executive power, and while they could decree a war, and a levy of troops, it remained for the Colonists themselves to carry the vote into effect. "Thus remarkable," Bancroft notices, "for unmixed simplicity was the form of the first federated Government in America."

Among the active agents in forming this Union, and its first President, was Winthrop, Governor of Massachusetts—a name distinguished in the early annals of New England for the wisdom and virtue of its possessors—and which at the present day has been borne to situations of high elevation and made conspicuous by the integrity, ability and eloquence of the patriotic statesman and the refined taste of the scholar.

I refer to one known publicly to us all for the wisdom and moderation of his course in Congress on the Oregon boundary question—while those who have the pleasure of his acquaintance personally have found him the courteous and urbane gentleman.

The next instance is the proposal of William Penn in 1697, for an annual Congress of all the Provinces on the continent of America, with power to regulate commerce—but which does not appear to have issued in any practical result.

This is followed at the distance of more than half a century by another proposal for Union which reached greater maturity, although it failed in ultimate adoption.

The celebrated Albany Convention is a well-known historical fact, and I shall beg the attention of the committee to this case, both as showing the motives that incited to union at that time, and also for the purpose of enquiring at another stage of my argument into the probable effect that Union, had it gone into operation, would have had on the connection between England and the Colonies, which not very long afterwards revolted from her sway.

The dread of approaching hostilities with France, and the necessity of increased contributions from the Colonies, induced high Colonial officials to entertain the idea and to desire to see it enforced by act of Parliament. Intelligent Colonists preferred a voluntary Union, and they used a significant argument:—"It would be a strange thing if six nations of ignorant savages should be capable of forming a scheme for such an Union, and be able to execute in such a manner as that it has subsisted for ages, and appears indissoluble, and yet that a like Union should be impracticable for ten or a dozen

English Colonies, to whom it is more necessary and must be more advantageous."

Reverses in contests with the French at length hastened forward the project; and at Albany, to use the words of Bancroft, "on the 19th January, 1794, assembled the memorable Congress of Commissioners from every Colony north of the Potomac.

"America had never seen an assembly so venerable for the States that were represented, or for the great and able men who composed it. Every voice declared a Union of all the Colonies to be absolutely necessary"; and it adds interest to this transaction that at its commencement the representatives of the Six Nations were present.

Franklin's project was the basis, and after great debate and deliberation was modified and adopted. Philadelphia was deemed conveniently situated for the site of the Federal Government, because it could be reached from the most distant parts in fifteen to twenty days.

The constitution was a compromise between the prerogative and popular power. The King was to name and support a Governor-General, who should have a negative in all laws; the people of the Colonies, through their legislatures were to elect triennially a grand Council, which alone could originate bills. Each Colony was to send a number of members, in proportion to its contributions, yet not less than two nor more than seven.

The Governor-General was to nominate military officers, subject to the advice of the Council, which was to nominate all civil officers. No money was to be raised but by their joint order. Each Colony was to retain its domestic constitution—the Federal Government was to regulate all relations of peace or war with the Indians; affairs of trade and purchases of lands not within the bounds of particular Colonies; to establish, organize and temporarily to form new settlements; to raise soldiers, and equip vessels of force on the seas, rivers and lakes, to make laws, and levy just and equal taxes. The Grand Council were to meet once a year; to choose their own Speaker, and neither to be dissolved, nor prorogued nor continue to sit more than six weeks at any one time but by their own consent.

"The Board of Trade," adds Bancroft, "on receiving the minutes of the Congress was astonished at a plan of general government, complete in itself, Reflecting men in England dreaded American Union as the keystone of independence."

It is well worthy of note that Franklin's mind took a wider range, and comprehended "the great country back of the Apalachian Mountains," where he predicted in less than a century would grow up a populous and powerful dominion; and through Thomas Pownell, who had been present during the deliberations at Albany, he advised the immediate organization of two new Colonies in the west.

The whole of this transaction offers so much incident for reflection and application, that I make no apology for presenting it so much at large to the Committee.

This was the scheme devised by wise and practical men for protection against foreign invasion and for internal improvement.

England rejected it, and reflective men there, as Bancroft says, were jealous lest it should lead to the independence of the Colonies.

May we not well doubt the reasonableness of the apprehension; as surely we may question the liberality and generosity, and I will add the justice of the principle that sought to keep the Colonies weak that they might be preserved dependent.

Let it be remarked that the thirteen Colonies whose Union was projected, contained at that time less than one million and a half of people, including the colored population.

I reserve as illustrative of a later part of my argument, the Union of

the American States after their independence; and now take up Lord Durham's report of 31st January, 1839.

In this we find that in 1814, the project of a Union of the North American Colonies had been formed by the late Chief Justice Sewell of Lower Canada; and by him submitted to his late Royal Highness the Duke of Kent—the father of our sovereign—and approved by the Prince, whose personal knowledge of these Colonies, and whose deep interest in their welfare are well-known facts.

The report of Lord Durham gives the Duke's letter in answer to Chief Justice Sewell's proposal. So interesting a document coming from such a quarter, the House will excuse me for reading:—

Kensington Palace, November 16th, 1814.

"My Dear Sewell,—I have this day had the pleasure of receiving your note of yesterday, with its enclosure; nothing can be better arranged than the whole thing is, or more perfectly I cannot wish; and when I see an opening, it is fully my intention to hint the matter to Lord Bathurst, and put the paper into his hands without, however, telling him from whom I have it, though I shall urge him to have some conversation with you relative to it. Permit me, however, just to ask you whether it was an oversight in you to state that there are five Houses of Assembly in the British Colonies in North America, for if I am not under an error, there are six, viz.:—Upper and Lower Canada, Nova Scotia and New Brunswick, the Islands of Prince Edward and Cape Breton.[1] Allow me also to beg of you to put down the proportions in which you think the thirty members of the Representative Assembly ought to be furnished by each Province; and to suggest whether you would not think two Lieut.-Governors, with two Executive Councils sufficient for the Executive Government of the whole, viz.:—One for the two Canadas, and one for Nova Scotia and New Brunswick, comprehending the small dependencies of Cape Breton and Prince Edward Island; the former to reside at Montreal, and the latter at whichever of the two situations may be considered most central for the two Provinces, whether Annapolis Royal or Windsor. But at all events should you even consider four Executive Governments and four Executive Councils requisite I presume there cannot be a question of the expediency of comprehending the two small islands in the Gulf of St. Lawrence with Nova Scotia. EDWARD."

Lord Durham's report has been in everybody's hand and need only be referred to. That able statesman believed a Union of the North American Colonies to be most desirable for their progress and advancement, and after much deliberation, and it would seem some change of opinion, adopted the conclusion that the Union should be Legislative, and complete to secure the full attainment of its advantages. The reasons by which His Lordship's views are sustained are given succinctly, but powerfully in the report. So clearly and conclusively indeed that it seems as if the best advocacy of the measure might be confined to the reading of those passages of His Lordship's report which relate to this point.

Next and last in the order of time, is the scheme of the British American League, adopted at its second convention at Toronto, in November, 1849. I hold in my hand a full report of the speeches and proceedings on that occasion, and I may say that the knowledge, ability and eloquence, displayed, well entitle to our respectful consideration the opinions of the gentlemen who adopted the conclusion that a Union of all the Provinces was desirable and proper. They were strong in number as in talents—of varied engagements in life, and being selected from all parts of the Province may be considered as expressing sentiments widely diffused.

[1] Cape Breton never had an Assembly and Chief Justice Sewell was correct.

The plan they agreed to submit for the consideration of the Provinces is set out in detail, and occupied considerable space. I will notice the leading portions.

The Canadas, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland, to be joined in a Federal Union under the name of British North America—with a Secretary and office in Downing Street—and a Vice-Regent and a Federal Legislature.

Each Province to have its local Legislature, the Legislative Council to be elected.

The Federal Government to be vested in a Viceroy or Governor-General—a Legislative Council appointed by the Crown, or elected by the Legislature of the Provinces for six years, one-third returning every second year—and an Assembly chosen by the Provincial Legislatures from their own members, by a special election—a deputation of members from the Legislative Council, and from the House of Assembly to have seats in the House of Commons.

The powers of the General Government were to be the imposition of taxes, duties and imports, which would be uniform throughout the Province —to assume and pay the debts of the several Provinces, and provide for the peace and welfare of the Union—to establish uniform commercial relations between the different Provinces and foreign countries, not repugnant to the laws of the United Kingdom—determine disputes—regulate navigation of the rivers and lakes—promote internal improvements—regulate post-office, militia, &c. A Supreme Court, being also a Court of Appeals, &c., &c. A subsequent resolution passed against the election of the Legislative Council.

Here is presented a scheme of confederation, evidently prepared with care, and worthy of consideration, which it is to be regretted had not been pressed upon the notice of the different Provinces.

I turn next, Sir, to a significant and pregnant example drawn from the history of the United States, after their independence, of the necessity of an Union of an energetic character, for the prosperity and advancement of communities bearing many resemblances to the British North American Provinces—and if history be philosophy teaching the example, the lesson will probably be not uninstructive.

Examine the condition and prosperity of the States collectively after the peace that ensured their independence, and we are presented with a lamentable picture of national weakness—both material and moral.

Look at their present national greatness. Then trace the causes of each result and we can, I think, be at no loss to make the application to our present subject.

Language could scarcely be stronger than that used to describe the ruinous effects of the weakness of the confederation that bound the States together after the peace—as may be seen on reference to Marshall's Life of Washington, from which I quote on this point :—

Washington earnestly deprecated these consequences, and urged as the only remedy increased confederative powers. He felt very strongly this necessity in relation to the commercial arrangements necessary for the national interests, and the redemption of debts contracted during the war, essential for the national honor. "America," he said, "must appear in a very contemptible point of view to those with whom she is endeavoring to form commercial treaties, without possessing the means of carrying them into effect"; and in other aspects of the case his expressions are not less forcible.

Lafayette, the friend of America and of Washington gives the opinion entertained in Europe :—

"I have often," he says, "had the mortification to hear that the want of power in Congress, of Union between the States, of energy in the Government, would make the Confederation very insignificant."

The testimony of the historian is no less clear and positive. Marshall's language is thus strong :—

"That the imbecility of the Federal Government—the impotence of its requisitions—and the inattention of some of the States to its recommendations, would in the estimation of the world, abase the American character, could scarcely be termed a prediction. From its inability to protect the general interest, or to comply with its political or pecuniary engagements, already had that course of national degradation commenced, which such a state of things must necessarily produce."

Again he says :—"The Confederation was apparently expiring from mere debility. The last hopes of its friends having been destroyed, the vital necessity of some measure which might prevent the separation of the integral parts of which the American Empire was composed became apparent even to those who had been willing to perceive it."

Such, then, was the condition of the American Confederation after their independence had been achieved by sacrifices, self denial and fortitude that all must admire, whatever opinion as to the merits of the contest may be entertained.

What are the United States now ? This map answers the question. Nearly half in superficial extent of the northern continent is embraced within their limits—an ocean is the territorial limit on either side, the Gulf of Mexico on the south—British soil on the north—and twenty-five millions of people occupy and own this vast domain.

Harper's Magazine for last month contains a very impressive review and comparison of the several census taken in the United States since 1790.

On the population and territory the article decants in a tone high indeed, but warranted by the facts. We are told that the law of growth has been remarkably uniform. In sixty years it varied but little from thirty-four per cent.:—in ten years, and assuming thirty-three and one-half as the decimal increase for the next half century, at the end of another sixty years the Republic will contain one hundred and thirty millions of people. Its territorial extent is stated as nearly ten times the size of Great Britain, and France combined ; three times that of the whole of France, Britain, Austria, Prussia, Spain, Portugal, Belgium, Holland and Denmark together.

It would, sir, be as vain as ignoble to attempt to decry the national position of the United States. America stands high among the nations ; and vigorous in youth—pressing onward and upward, well may her sons be dazzled in the prospection of her destiny. Year after year the wilderness retires before the energy and endurance of her people ; and her commerce spreads more widely over every sea. Her Ægis guards her humblest citizen in the remotest lands, until the title of an American citizen is as secure a passport as of old was that of Roman.

What has achieved this great result ? Union—effective confederate Union.

Would it have been thus had the state of imbecile and imperfect confederation continued, that Lafayette deplored and Washington mourned over, reproved and redressed ?

Assuredly not.

Let it be remembered that when Washington showed the evils of disunion on the commercial relations of his country her population did not very greatly exceed that of the British North American Colonies at the present day.

The dissimilarities in the circumstances of the United States, and the British Colonies, do not, I think, prevent the application of this example.

Foreign negotiation was necessary for the commercial arrangements required by the United States, and with us the Imperial Parliament exercises this duty. But it is clear that the commercial relations of the provinces will demand a special consideration controlled by their own circumstances and interests ; and Union may be found requisite to give efficacy to these considerations.

The subject naturally leads to the enquiry whether the North American Provinces possess a strength and capacity suited for Union.

Scotland, in 1707, at the Union, had a population of about 1,050,000.

Ireland, in 1821—twenty-nine years after her Union—a population of not seven millions—probably at the Union not more than four millions.

The thirteen Provinces, previous to the Revolutionary War, afford, however, the best materials for comparison.

In thinking of their strength and condition we are apt to be misled by what they achieved in a struggle—for a time unassisted—with a powerful nation—as well as by what they had before done in the wars with the French and Indians.

Franklin, in his examination in 1766 before the House of Commons, declared that in the French war the Colonies had raised, clothed and paid 25,000 men, and spent many millions—and that Pennsylvania alone disbursed £500,000.

Yet he rated the number of men from sixteen to sixty years of age in British North America at about 300,000, and estimated that the inhabitants of all the Provinces at a medium doubled in twenty-five years. In Pennsylvania the taxes annually realized, he said, about £25,000—and her imports from Great Britain amounted to £500,000, and exports thither to £40,000.

The whole population of the thirteen colonies at the beginning of the Revolution did not exceed two and a half millions, and in 1770 it had not reached four millions—a very small advance for the number of years.

Bancroft describes them thus :—

"Yet the thirteen Colonies in whom was involved the futurity of our race were feeble settlements in the wilderness, scattered along the coast of a continent, little connected with each other, little heeded by their metropolis, almost unknown to the world. They were bound together only as British America, that part of the Western hemisphere which the English mind had appropriated. England was the mother of its language, the home of its traditions, the source of its laws and the land on which its affections centred.

And yet it was an offset from England rather than any integral part of it ; an empire of itself, free from nobility and prelacy, not only Protestant, but by a vast majority dissenting from the Church of England ; attracting the commoners and plebean sects of the parent country and rendered cosmopolitan by the recruits from the nations of the European continent. By the benignity of the law, the natives of other lands were received as citizens ; and political liberty as a birthright, was the talisman that harmoniously blended all differences, and inspired a new public life, dearer than their native tongue, their memories and their kindred. Dutch, French, Swede and German renounced their nationality to claim the rights of Englishmen."

The present population of the British North American Provinces greatly exceeds that of the thirteen Colonies at the Revolution. Taking the result of the last census in each Province, we have the following statement of population :—

Population of British North American Colonies, from Hunt's Magazine, January, 1854, page 181 :—

Year. Provinces.	Population.	Sq. Miles.
1852—Upper Canada	953,239	147,832
1852—Lower Canada	890,261	201,989
1851—New Brunswick	193,800	27,700
1851—Nova Scotia	276,117	18,746
1851—P. E. Island	62,678	2,134
	2,376,095	
1852—Newfoundland	101,600	57,000
1851—Hudson's Bay Ter....	180,000	2,500,000
1851—Labrador	5,000	170,000
	2,662,695	3,125,401

The population may now be fairly taken at three millions.

For the rate of increase in the Canadas, I avail myself of two lectures of the Rev. Adam Lisle, before the Mechanics' Institute, Toronto, in February, 1852, in which, with much research and ability, the Rev. gentleman has triumphantly vindicated Canadian as compared with United States progress.

A single passage will serve my present purpose :—"Taking Canada as a whole, its population has increased from 60,000 to 1,582,000 in seventy years." Hence, in 1850, it was over twenty-six times what it was in 1760 ; more, considerably, than two and a half times what it was in 1825, when it numbered 581,657."

Thus the increase in twenty-five years is over a million, or about sixty-eight per cent. in ten years. We have seen that the present decimal increase of the United States is thirty-three and a half—much beneath that of Canada.

Looking forward for a quarter of a century, the population of the North American Colonies may be assumed to reach over seven millions, and in another quarter to be pressing on to eighteen millions.

As to territory, we have but again to look to the map to perceive that vast as is the extent of the United States, the British domain exceeds it,—and although much of this large territory lies in the inhospitable region of the north, yet more than enough for accumulated millions of people remains of lands of the best quality for settlement. The extent of the several Colonial limits I have already stated ; and beyond Canada to the west onward to the Pacific and Vancouver's Island lies a vast country destined to be the home of multitudes.

Aware that a gentleman among us, distinguished by his benevolent regard for the aboriginal inhabitants of Nova Scotia, and his earnest efforts to preserve from destruction our river fisheries, had, under the influence of an energetic spirit, an enquiring mind, and the indomitable zeal of an ardent and scientific sportsman, crossed the American continent and visited the coasts of the Pacific, I sought information from him as regards the country to which I have last alluded.

Although his observation has been chiefly confined to the United States side of the line, yet he crossed over to Vancouver's Island, and had some knowledge of the coast of the British territory extending to the northward.

Captain Chearnley, whom the Committee will recognize as the gentleman to whom I have made reference, has kindly favoured me with information which cannot fail to be interesting. At Vancouver's Island the soil is good, and the country in every way adapted for settlement—the vegetables were of superior size and quality, and he witnessed the importation of cattle, intended to be turned out for breeding, and there coal abounds.

Nisqually, at the south-east extremity of the Straits of St. Juan de Fuca, was highly esteemed for sheep farming, and he there saw an establishment of the Hudson Bay Company at which was probably not less than 3,000 sheep, tended by men from the old country.

The salmon fishery was of boundless productiveness, and fish of great size were ordinarily sold by the Indians for the most insignificant price—a leaf of tobacco purchasing a large salmon. From what he saw of the Oregon territory, wheat of the finest quality is grown, and forests of magnificent pines abound, he had no doubt that across the line on the British side of the country which he did not visit, would present similar characteristics.

But, sir, it is needless to pursue these observations. The Crown of England possesses territory enough in North America to occupy centuries in filling up, and to give space for many national communities.

Confining ourselves to what has been allotted to the Provinces, the field is large enough to exercise the most ardent imagination in the vision of the future.

In view of the increase and trade of the Colonies the facts are more than sufficient for the argument.

The present revenues of the several Provinces may be set down at one and a quarter million of dollars.

In 1852 Canada had	$723,720
In 1853 New Brunswick had	$180,554
In 1853 Nova Scotia, say	$120,000

The Prince Edward Island and Newfoundland revenues and the increase on the Canadian will probably bring the amount not much below the sum I have named.

Two years ago the imports of the five Colonies reached $8,000,000, and the exports exceeded $5,000,000.

In the Halifax Sun a few weeks ago the imports in 1852 are said to have reached $5,720,000, the tons of shipping built, 112,878—not much under half the amount in the United States ; and the tons of shipping owned, half a million, exceeded only by England and the United States.

In view of all these facts it may be assumed that the British North American Colonies possess a strength in population, territory, commerce and material resources that entitle them to a higher national position than they occupy, and that would justify their union as the means for attaining that position.

I shall, therefore, proceed to offer some remarks on the motives to union in addition to what has already been incidentally said.

The Union may be presented in a two-fold aspect :—

The benefits it will yield.

The evils it will avert.

Looking at each Colony as possessed of some advantages—some resources peculiar to itself, it seems a conclusion almost inevitable and self-evident, that combination must increase their effectiveness ; and that the whole, developed and directed by one governing power, representing all the Colonies, must produce a result greater than the aggregate of the product under the separate, unassisted agency of each separate Colony. As an example:—Nova Scotia, with her eastwardly position, and excellent harbours, offering the first stopping place in the navigation between Europe and America—surrounded on every side by the sea or extensive bays—furnishing great facilities for commerce and navigation—possessing unrivalled mines of wealth, in fisheries and minerals—needs a field larger, a strength greater than her own to give full efficacy to those elements of advancement.

Canada—vast in her dimensions—unexcelled in her agricultural powers—equal to unlimited immigration—and teeming with the materials and means of progress, almost without a precedent—is shut out from navigable communication with the sea, by the rigours of winter for a large portion of the year.

Without Union, the Colonies will not minister as they might, to each other's benefit. At present they feel not the disposition ; if they would, they cannot without an united government, and a common system and policy.

The small interest felt in each other by the Colonies would be almost incredible to strangers. They confound us as one. We, as communities, are not only several in fact, but in feeling.

Union, giving us a common interest, and making us fellow-workers in advancing that interest, would remedy this great evil ; and an uniform system would remove impediments, which the regulations and partial interests of the Colonies will, while separate, ever be presenting.

If it be objected that Union would be distracted by opposing interests, I answer that Union is not anticipated except on the basis of mutual benefit, and the assumption that no large interest would be sacrificed.

If, again, it be urged that the United States afford to the Colonies many of the facilities that are presented as reasons for Union ; the reply is :—That

to a large extent that is impossible—that as far as the fact does extend, the continuance cannot be relied on—and above all that one of the chief objects of union is to concentrate Colonial interests and to augment Colonial strength, and thereby avert the otherwise inevitable consequences of gradual absorption into that republic; which I believe must result from keeping our interests detached, while each Colony is gradually drawing itself closer to the United States.

It is impossible to enter into details—the occasion permits only the consideration of general principles, and on general principles I cannot but assume that the balance of good as regards each portion of the Union would predominate over partial inconvenience.

Rising to a higher point of view—and turning from the influence of union on the internal improvements of the Colonies, to the effects of the Union in external aspects—the relation of the Colonies to Great Britain and to the United States present themselves as the principal subjects of consideration.

In these relations the weakness of the Colonies—separate; their strength, united, present a contrast that strikes the mind instantly and with irresistible force. This contrast gathers power as it is carried forward, and let it not be forgotten that undeviating smoothness in the progress of events as little characterises the existence of communities as of individuals.

Times will come and occasion will arise when these Colonies in whole or in part will find emergencies demanding all their strength and forcing to united efforts, when, perhaps, the opportunity and means of effective Union may be wanting.

We may find some illustrations at the present time, in the cases of the navigation of the St. Lawrence, sought by the United States—reciprocal trade between the Colonies and the United States—and the fisheries on our coasts.

United, the Colonies would have a common interest sustained by consolidated strength and promoted by undecided counsel. Divided, each pursued its own views, on its own strength, and according to its own judgment, possibly at conflict with the others, and it may be with results at the moment considered for the benefit of one, but which had an united interest compelled to more enlarged views, would have been rejected by all.

Let us consider for a few moments the case of the fisheries which peculiarly affects us in Nova Scotia.

Within the limits of three marine miles the coasts of Nova Scotia abound with fisheries of incalculable value. The law of nations and sanctions of treaties give to the Queen's subjects as clear a right to their exclusive enjoyment as they have to merely any territorial possession; and this right is essentially Colonial, because its enjoyment is inseparably incident to Colonial residence. Yet it may be that at this very moment this birthright and property of Colonists is being the subject of treaty and traffic at Washington—nay, they may already have been surrendered for some partial compensation, adding insult to wrong. I will not say that Nova Scotia has not been consulted; but has her voice been invited or been heard as the voice of a free people ought in such a matter?

Who has most influence in this affair—the manufacturers of Manchester—sustained by a Parliamentary host or Her Majesty's loyal subjects of Nova Scotia, unaided by one vote—whose geographical position, if not existence, is, it may be, unknown to one half the assembled commoners of the parent state?

If it shall be said that exclusive possession requires protection against encroachment beyond what we can afford, I might in the present relations of the Colonies question the conclusion. But admit its correctness. It is the consciousness of this weakness that prompts me. From this injurious imbecility I would see my country delivered by a Union that would give the North American Colonies in matters affecting themselves a prospect of having

weight proportioned to their rights in the Councils of the Empire, and in the deliberations of foreign States. I would see it raised to the dignity and possessed of the ability of contributing towards expenditures incurred for its benefit. I attempt not to conceal the fact that the United Colonies would be called to assume burdens and responsibilities greater than they have yet been accustomed to. No. Enlarged privileges must bring increased obligations, and no man worthy of the name would evade the privileges of manhood that he might escape its duties.

It may be objected that interests prized by some Colonies would be lightly esteemed by others :—Canada, for instance, may be supposed to care little for our fisheries. The answer is that what promoted the common welfare cannot be presumed to be disregarded by any of the members of the Union ; and that what is valuable to one is an accession to the general stock, not likely to be inconsiderately sacrificed by their united government.

But, however this may be, if any surrender should be made after due deliberation by the Supreme Colonial Government, none—dissatisfied though they might be with the act of their own Government—could complain that their rights had been disregarded, without having enjoyed the privilege of constitutionally vindicating their claims ; and they would be relieved from the humiliating consideration so often forced upon them in their present condition.

No part of this subject is in my mind more important than the bearing it has on the systems of government and administration of justice, especially in the smaller Colonies. The consequences affect society in its vital interest—the moral sentiment of a people.

How far the artificial system of administration, through a parliamentary majority, as in England, is well adapted to any country free from the complications of an Imperial State, and ancient institutions it is not necessary to enquire—as I assume the Government of the United Colonies, if a Legislative Union should be effected, would be modelled after the British form. But quite sure I am that for a Colony with a small population, scattered thinly over its surface—a large proportion of them scantily educated—having no men of leisure—comparatively few of much wealth, and still fewer distinguished by literary attainments, such a system of administration is unsuited alike to the moral elevation and to the material progress of the people.

That it is British proves nothing, unless to prepare us to expect that what suits a country circumstanced as England would not be fitted for communities such as ours. There exist the opposite principles of monarchy, aristocracy and democracy, and there, too, are large classes of landholders, and men of property whose interest is alive to preserve the balance necessary for the security of the State ; while learning, refinement and leisure abound to assist the interests of property in creating, fostering and preserving those sentiments of public virtue, essential for the well-being of society, and in guarding against and checking the abuses and corruptions to which governments are prone.

Hence a public opinion, which through the medium of a free press, is able alike to control the Crown, nobles, Parliament, statesmen and the people, when strong occasion calls it forth. In such a country conflicting elements require to be combined, harmonized and kept in check, and the means exist to effect that object. But here we have not and cannot have the presence of the influence of monarchy or nobility, and all attempts at imitation will but produce spurious and incongruous results. We have and can have but one element of Government—the democratic, and that it is our interest so to regulate and check as to create and preserve a simple, an incorrupt and an economic system of government.

The great want in a small community such as Nova Scotia, under the system of government instituted among us, is the free working of a healthy

public opinion. The party divisions which will exist under this system, and which, indeed, may be deemed necessary for its effective operation, leaves no middle class to adjust the scale and check the violation of public faith and personal honour in public men, and the circumstances of the country furnish not men of education and leisure adequate to control and direct the public sentiment.

We have but to examine the system in its operation—to trace the influences of the Executive on the Legislature, and of the Legislature on the Executive, and of both on the people to perceive that its tendencies are to imbecility of executive action, to defective Legislation, and above all to corruption; and that there exists no influence to stay the evils.

It was my intention to have gone into this branch of the subject more largely, but I pass over my notes on this topic—because I shall, without further enlargement, more than sufficiently occupy the time of the House and tax its patience, and because I might awaken feelings opposed to the calmness essential to the proper consideration of the question before us.

The evils to which I have alluded must reach the administration of justice, and gradually, but inevitably deteriorate the intelligence and professional knowledge and the independence of the Judges, not only because the system makes to a considerable extent political position the path to the Bench, but because the causes that led to the toleration of corruption in private and public men, will be fruitful of evil throughout society in all its relations.

The Union of the Provinces, with one general government, would at least diminish the evil consequences inevitable in communities too small—too poor —too little advanced for the advantageous exercise of the system.

A wider field would give greater scope to the aspiring and larger, and perhaps more generous, influences would be required for success. Party action operating in an extended circle, would become less personal in its nature, and be consequently mitigated in its acrimony and less powerful in suppressing a wholesome public opinion.

There is another consideration not yet touched, but which lies deep in the foundations of the subject, and pervades it in all its relations, awakening emotions too powerful not to make themselves practically operative—the anomalous position of a Colonist.

The Englishman, Scotchman and Irishman has a country by which he calls himself, and claims a nationality that commands respect.

The United States citizen has a national character that is a passport over the world. The eagle of his country follows him in the remotest regions, and he is sure of the vindication of his violated rights at all hazards and any expenditure.

The Colonial subject of Great Britain may, indeed, find a similar protection and redress in the case of flagrant wrong. But his national standing as he realizes it in the ordinary occurrences of life, is dubious and unsatisfactory.

Let him go to England and he perhaps discovers his cherished home to be there an unknown land, or in some strange geographical confusion confounded with distant and unconnected places ; and when his countrymen have clearly ascertained the fact that he is indeed a Colonist, he perceives that he has sunk in estimation, and that he occupies in their consideration a standing of inferior order to that accorded to the citizens of the United States, or other subjects of a foreign State. It fares not much better with him anywhere else. He carries nowhere a recognized name or acknowledged national character.

It is true communities as well as individuals may be virtuous and happy in secluded and inferior stations ; but in this age of progress and of change, those who are pressing on our footsteps, and will presently occupy our places, and for whom it is our duty to think and act, will not be contented to hold

the equivocal and hybrid relation of Colonists, unless their own standing shall become elevated, and shall give them an acknowledged name and at least a quasi nationality. This the United Provinces of British North America, by whatever name denominated, are able to do.

This leads to a different branch of the subject—the influence which the Union of the North American Colonies would have in their connection with the parent State.

I cannot perceive that the form which the inhabitants of a Colony may prefer as best suited for the management of their own affairs can of itself affect their relations with the Imperial State ; still less than ever now that the principle of Colonial self-government is clearly acknowledged and practically adopted.

The mode in which the Colonies expand and advance towards maturity, leaves untouched the principle on which the Colonial relation depends, and in proportion to their happiness and prosperity would naturally be their reluctance to dissolve a connection fruitful of results so desirable, while their increasing strength and importance would give them a weight and consideration in the Councils of the Empire, that would render improbable any unhappy and injudicious interferences with their rights ; and so avert the causes of dissatisfaction.

It is interesting in this view to look back upon the past. Some of the Colonies in their early history received constitutions so independent as to be quite startling, in contrast with the policy in after years advanced by the British Government. The American historian tells us that "in Pennsylvania human rights were respected. The fundamental law of Wm. Penn, even his detractors concede, was in harmony with universal reason, and true to the ancient and just liberties of the people."

But Connecticut, as early as 1662, presents the most peculiar spectacle in this respect. The charter of that State created a simple democracy, and gave the people, without reference to, or control by the Imperial Government, the unmodified power to elect all officers, enact laws, administer justice, inflict punishments and pardon offences ; and "in a word to exercise every power deliberative and executive" ; and yet this charter was granted by Charles II. It is true it emanated from no just principle on his part ; but from the usual coincidence that the favourite (a Winthrop) whom he desired to reward, was a man of noble nature, who, unlike the ordinary recipients of Royal bounty, sought not the advancement of his own fortunes, but the benefit of his country. Still the fact that nearly two centuries ago such powers of Colonial self-government were not imagined to infringe Colonial dependence may make those pause, who in the present advanced state of political science, see in the Union of the North American Colonies danger to British connection.

It may be said that these instances are not happy illustrations of my argument, seeing that revolt and separation followed. Long previously, however, the early charters had been violated, and practices introduced and claims advanced inconsistent with their principles.

Who that regards the earnest desire to avert separation, which at first animated many of the most distinguished actors in the American revolution, will venture to declare that revolt and separation would have ensued had the principles of early charters never been interfered with ?

Suppose again, that the Albany Union had been effected, under the sanction of the British Government, may it not be questioned whether capricious, and inconsiderate and obstinate statesmen would have urged the same claims —acknowledged now to have been arbitrary and unconstitutional—upon the thirteen Colonies compact and strong in union, which it was ill-advisedly thought might safely be ventured upon with separate Colonies, weak in themselves, and apparently without the elements of consolidated power. This revolt and separation that union might—humanly speaking it probably would—have been averted.

Let me not forget one significant fact. Not only has the Union of the British North American Colonies been advocated by able British statesmen, but we have seen that it was a subject of mature consideration and found favour with a Prince of the blood—the father of our revered sovereign. He could have seen in it no tendencies to rend an Empire, the maintenance of whose undiminished glory and power must have been so dear to him.

Before leaving this portion of the subject I feel myself constrained to express a sentiment, which I hope will not be misapprehended or misapplied.

If an Union be necessary for the happiness and prosperity of these Colonies, it is no legitimate ground for withholding it, that it may possibly tend to a severance of the connexion with the parent State. Justice demands alike from Imperial and Colonial statesmen that on such a question, the preliminary —the controlling consideration should be the essential and permanent well-being of the Colonies.

It only remains that a few words should be said on the nature of the Union. This may be either by First, Confederation ; or Secondly, by Legislative Union, including the Lower Provinces, with Confederation with Canada.

In all the instances I have quoted, we do not meet with the scheme of Legislative Union until Lord Durham's report in 1838, and therefore example favors confederation.

I stated at the outset that I did not think this was the time to spend much consideration on details ; but though the mode of Union is hardly the question for present deliberation, I will not here withhold my strong conviction that a Legislative Union would best promote the common interests and the objects to be attained.

But with this there must be connected a mature and perfect system of Municipal Corporations—giving to the people in every country, not only the entire control and management of their own immediate affairs but much which is now the subject of Legislative and Executive functions.

Thus in the concentrated strength and energy and progress of these Colonies—in an enlarged and more wholesome public opinion—a wider range for talent, and more extended scope for the aspirations for ambition, might be found a remedy for the evils that seem inseparable from the condition of Colonists at present ; and a theatre of action for British subjects be prepared, worthy of British energy and suited to British feelings.

I cannot conclude, Mr. Chairman, without acknowledging how far short I feel I have fallen of the capacity of the subject—I will not say of its requirements, for the measure I have advocated needs little aid of argument or of eloquence. The principle on which it rests is so simple—so truthful—so practical—so acknowledged—that argument and eloquence seem superfluous.

Union is strength—reason, philosophy and experience declare, illustrate and confirm the truth. Religion and civilization demand its aid.

It upholds the sovereignty which God has given to man over creation, and is the basis on which rests all the agencies for fulfilling the Creator's designs for the amelioration of our race.

Supported on this principle, the question seems no longer open to debate, so soon as the practicability of Union is affirmed. And yet the subject affords ample scope for reasoning the most rigid, and eloquence the most exciting. Hence at one moment the mind is embarrassed to find valid objections to oppose—at another oppressed by emotions difficult to utter.

I trust and believe my deficiencies will be lost in the more perfect and able exposition the subject will receive from those around me, and that graced by the aids of reasoning and eloquence it will be placed in the light it ought to occupy before this Province, our sister Colonies, and the Empire.

I offer no apology—or if any be required, my interest as a Colonist, my duty as a citizen, my country's welfare, and the well-being of our posterity must plead my excuse for inviting this discussion. Called in the providence

of God to take part in the councils of my country, I have now fulfilled a duty I should have been ill-satisfied to have left undone, when my public career should terminate.

If it be destined that no such Union as that contemplated shall be effected, and those who succeed us shall feel the stern alternative of exiling themselves from the land of their birth, because it satisfies not the exigencies of their nature,—or of transferring that land to a foreign nationality—I at least shall have done what in me lies to avert these consequences ; and if it shall please God to raise up in the northern portion of this great continent a nation of freemen, acknowledging British sovereignty, and advancing with the expansive energy of which Britons are capable and the age demands—rivaling—but with no mean jealousy—rather with a friendly and co-operative spirit, the progress of our Republican neighbours—and giving to our children a place among men which their fathers possessed not—then, Sir, will it be reward enough for any man that his memory shall be recalled as having been one, although among the humblest, of the pioneers in so great a work.

I move, Sir, the adoption of the resolutions which I read at commencing, and which I now present for the deliberation of the Committee.

APPENDIX J.

MR. HOWE'S SPEECH ON THE ORGANIZATION OF THE EMPIRE.

(From Howe's Speeches and Public Letters).

On the 11th of March, [1854] on a motion brought forward by the leader of the Opposition, to promote a union of the Provinces of British North America, Mr. Howe delivered a speech on the organization of the Empire which has been justly regarded as very able. It was extensively circulated and much admired on this side of the Atlantic at the time of its delivery; and, when republished in England in 1855, attracted a great deal of attention from the metropolitan and provincial press of the mother country:—

Mr. Chairman,—Had the Government brought this question here, my honourable friend from Londonderry might have charged upon us the selection of an inappropriate season, or disregard of the pressure and strain of public business already tasking the industry of this Assembly. But, sir, the resolution has been brought here by the leader of the Opposition, and we are challenged to discuss it. Perhaps if we had introduced the measure, it might not have been met in the spirit which I trust we shall display. One half of the House might have fancied that some sinister design lurked within the resolution, and the supposed interest of parties might have combined them against it; but I desire to treat the gentleman with more courtesy—the resolution with the consideration it deserves, and I trust that the day is yet far distant in Nova Scotia when questions of transcendent importance will be entangled in the meshes of party, or fail to challenge, no matter whence they emanate, earnest and thoughtful investigation in this Assembly. Sir, I differ from my honourable friend from Londonderry, and from all those who are disposed to treat this subject lightly. Come from whose hand it may, the resolution before the Committee opens up for discussion the broadest field, the noblest subjects ever presented to the consideration of the Legislature. A day, or even a week, may be well spent upon such a theme. If, sir, such topics were oftener presented here, our ideas would expand beyond the charmed, it may be, but the contracted circle of party disputations; our debates would assume a higher tone; and the hopes and aspirations of our people, clustering around their firesides, would point to interests more enduring than even the result of half our controversies—some poorly paid office, of paltry provincial distinction.

Sir, I regret not the time which this question will engross, but my inability to do it justice. When the prophets and orators of old were about to discourse of the destinies of nations, they retired to the mountains or by the streams, to meditate; they communed, in the abundance of the leisure with God above, and caught their inspiration alike from the tranquillity which enabled him to penetrate the dispensations of His Providence, as some phenomena of nature all around them; and which tinged with beauty the "thoughts that breathe, and words that burn" which have come streaming down like lines of light, even to the present hour. They were often untrammelled by daily duties and human obligations borne down by official labour and responsi-

bilities of various kinds. I feel that, for me at least, the occasion of this discussion is inauspicious. Believe, me, Sir, that my obligations to my Sovereign as her sworn Counsellor to the head of the Government, as his constitutional adviser, and to the party with which I act, press heavily upon me. But yet, rising with the magnitude of this great theme, I shall endeavour to catch its inspiration; remembering only that I am a Nova Scotian, the son of a loyalist, a North American, a true subject of the Queen; but one whose allegiance, to the perfect, must include every attribute of manhood, every privilege of Empire.

Sir,—I wish that my leisure had been greater, that I might have brought before you the ripened truths of meditation, the illustrative stores of history, which research only can accumulate. In no vain spirit do I wish also that the sentiments which I am about to utter, might be heard and pondered, not only as they will be by those who inhabit half this continent, but by members of the British Parliament, by Imperial statesmen, by the Counsellors who stand around, and by the gracious sovereign who sits upon the throne. Perhaps this may not be. Yet I believe that the day is not distant when our sons, standing in our places, trained in the enjoyment of public liberty by those who have gone before them, and compelled to be statesmen by the throbbing of their British blood, and by the necessities of their position, will be heard across the Atlantic; and will utter to each other, and to all the world, sentiments which to-day, Mr. Chairman, may fall with an air of novelty upon your ear, I am not sure, sir, that even out of this discussion may not arise the spirit of union and elevation of thought that may lead North America to cast aside her Colonial habiliments, to put on national aspects, to assert national claims, and prepare to assume national obligations. Come what may, I do not hesitate to express the hope that from this date she will aspire to consolidation as an integral portion of the realm of England, or assert her claims to a national existence.

Sir, the first question which we men of the North must put to ourselves, is, Have we a territory broad enough of which to make a nation? at the risk of travelling over some of the ground trodden yesterday by the learned member for Annapolis, I think it can be shown that we have. Beneath, around and behind us, stretching away from the Atlantic to the Pacific, are four million square miles of territory. All Europe with its family of nations, contains but three million seven hundred and eighty thousand or two hundred and ninety-two thousand less. The United States include 3,330,572 square miles, or 769,128 less than British America. Sir, I often smile when I hear some vain-glorious republic exclaim:—

> "No pent-up Utica contracts our powers,
> The whole unbounded continent is ours;"

forgetting that the largest portion does not belong to him at all, but to us, the men of the North, whose descendants will control its destinies for ever. Sir, the whole globe contains but 37,000,000 square miles, we North Americans living under the British flag have one-ninth of the whole, and this ought to give us "ample room and verge enough" for the accommodation and support of a countless population. It is true that all this territory is not yet politically organized, but

	Square Miles.
Canada includes	400,000
New Brunswick	28,000
Nova Scotia	19,000
Prince Edward Island	2,000
Newfoundland	37,000
Making in all	486,000

which have settled landmarks, and are controlled by Provincial Legislatures. Throwing out of consideration the unorganized territory behind, let me show you, by comparison what the rest include. The great Province of Canada is equal in size to Great Britain, France and Prussia. Charmed by her classic recollections, how apt are we to magnify everything in the old world, and to imagine that Providence has been kind to her alone. Yet the noble St. Lawrence is equal in proportions to the Nile—the great granary of the east, which, from the days of the patriarchs, has fed millions with its produce. Take the Italian's Po, the Frenchman's Rhone, the Englishman's Thames, the German's Rhine and the Spaniard's Tagus, and roll them all into one channel and you then have only a stream equal to the St. Lawrence. The Great Lakes of Canada are larger than the Caspian Sea, and the Gulf of St. Lawrence (with which we are so familiar that we forget what it is) contains a surface of one hundred thousand square miles, and is as large as the Black Sea, on which the proud fleets of four hostile nations may at this moment be engaged. Accustomed to think and feel as Colonists, it is difficult for us to imagine that the Baltic, illustrated by Nelson's achievements and Campbell's verse, is not something different from the Gulf of St. Lawrence, and yet it is not. Its dimensions are about the same; its climate rigorous; its coasts originally sterile, and the sea kings and warriors who came out of it, made of no better stuff than the men who shoot seals on the ice flakes of Newfoundland, till farms on the green hills of Pictou, or fell trees in the forests of New Brunswick.

But, Sir, let us confine our attention for a few minutes to the Maritime Provinces alone. Of these you rarely hear in the mother country. If an Englishman thinks of North America at all he divides it between Canada and the United States. Except in some sets and circles, chiefly mercantile, you rarely hear of Nova Scotia, New Brunswick, Prince Edward Island or Newfoundland. The learned member for Annapolis truly described the Colonial condition when he stated that in the estimation of our fellow subjects at home, a Colonist is nothing. But with God's blessing we will wipe away the invidious distinction. The Maritime Provinces alone cover 86,000 square miles of territory. They are half as large again as England and Scotland together. They are as large as Holland, Greece, Portugal, Belgium and Switzerland all put together. New Brunswick alone is as large as the kingdom of Sardinia and even Nova Scotia is larger than Switzerland.

Mr. Chairman, I listened with pleasure to the member for Annapolis, when he spoke as he did yesterday of the resources of Nova Scotia. I do not so listen to him when, misguided by passion, he disparages his country that he may have a fling at the Government. I have said that Nova Scotia is as large as Switzerland, a country which has maintained its freedom for ages, surrounded by European despotisms. If it be answered that Switzerland owes her national existence to her inaccessible mountains, then I say that Nova Scotia is as large as Holland, which, with a level surface, did the same.

The Hollanders, who almost won from the sea a country no larger than ours, defied the whole power of the Spanish monarchy, swept the British channel with their brooms, and for a century monopolized the rich commerce of the Eastern islands which they had subdued by their enterprise and valour. Our country is as large as theirs, and let us not be told then that we are getting on stilts when we either point to the resources which past industry has but imperfectly developed, or foreshadow that future which looms before us so full of hope and promise. Why, Sir, even little Prince Edward Island is larger than all the Ionian Islands put together, and yet they are more thought of by European diplomats than are our Provinces, only because they sometimes indulge themselves in the dignity of insurrection.

But it may be said, What is extent of territory if it be a howling wilder-

ness ? If you have not the population you can aspire to no national existence. Let us see, sir, if we have not men enough to assert and maintain any status to which we may aspire.

	Inhabitants.
Canada contains	1,824,264
New Brunswick	200,000
Nova Scotia	300,000
Newfoundland	100,000
Prince Edward Island	75,000

Yet, after all, it may be retorted, what are two millions and a half of people? Not many indeed, but everything must be tested by comparison. What have two millions and a half of people done? That is the question. Take Scotland, for example ; she has but two millions six hundred and twenty thousand now, yet will any man assert, that if Scotland desired a distinct national existence, if the old lion which Punch affects to laugh at were really angry, that Scotsmen would hesitate to unfurl the old flag and draw the broad claymore ?

True it is, that Scotland has not her separate legislature, but she has what we have not,—and to this point I shall shortly turn the attention of the Committee,—her fifty-three members to represent her interests in the Imperial Parliament. British America, with an equal population, has not one.

Turn to our own continent, and by way of example, take the State of Ohio. She has but a million and a half of people, yet she has not only her State Legislature and Government as we have, but sends nineteen members to the National Congress. She is a Sovereign State, but she forms a part of a great confederacy, and her nineteen members guard her interests in the discussions which touch the whole, as ours are not guarded in the great Council of the Empire of which we form a part. Will North Americans long be satisfied with less than every State of the Union claims ?

Turning again to Europe we find Saxony, that centuries ago gave conquerors and kings to England, has but one million seven hundred and fifty-seven thousand inhabitants. Wurtemburg, with about the same population is a kingdom, with its European potentate at its head, its Court, its standing army, its foreign alliances. Denmark, which also gave kings and ravagers to England and has retained her national position from the days of Canute to our own, has but two millions two hundred and twelve thousand and seventy-four inhabitants. Yet her Court is respected ; her alliance courted ; she maintains a peace establishment of twenty-five thousand men, which is raised to seventy-five thousand in time of war. Look at Greece :—

"The isles of Greece, the isles of Greece !
Where burning Sappho loved and sung."

Greece that broke the power of Xerxes, and for arts, arms, oratory, poetry and civilization stands pre-eminent among ancient states. Greece, at this moment has her King, who reigns over but nine hundred and thirty-six thousand subjects. But, sir, does extent of territory make a nation ? Never, Number of people ? No. What then ? The spirit which animates, the discipline that renders them invincible. There were but three hundred men at the pass of Thermopylæ ; yet they stopped an army and their glories stream down the page of history, while millions of slaves have lived and died and are forgotten. Glance at Portugal ; she numbers less than three and a half millions (3,412,000), and yet, when she had a much smaller population, her mariners explored the African coast, found their way around the stomy cape and founded in the East a political and religious ascendancy which lasted for a hundred years. We, North Americans, sit down and read the exploits of Gustavus Vasa, or of Charles XII., of Sweden. We wonder at the prowess of those Norman adventurers who carved out kingdoms with their conquering

swords and founded dynasties, in France, Italy and England. Yet we are apt to forget that Sweden and Norway together have but four million three hundred and six thousand six hundred and fifty souls, and that the mingled blood of the Scandinavian and the Saxon courses through their veins. The men who are felling pine trees upon the Saguenay, or catching fish in our Baltic would make good sea kings to-morrow, if plunder and not commerce were the order of the day. Let us, in Heaven's name, then, throw aside our stupid devotion to historic contemplation and look the realities of our own position fairly in the face. Sir, I have spoken of Switzerland, but I forgot one striking fact; that with a population less than that of British America at this moment, she has not only maintained her nationality, but has sent armed warriors to fight the battles of half the states of Europe.

Let me now turn your attention to South America. Here we find a cluster of states, certainly not more intelligent or more deserving, but all challenging and enjoying a higher status than our own. Let us group them :—

	People.
Venezuela	1,000,000
New Granada	1,678,000
Equador	600,000
Peru	1,373,000
Bolivia	1,700,000
Chili	1,200,000
Buenos Ayres	675,000

Some of these countries are, in education and political knowledge, beneath contempt, not one of them contains two millions of people, yet all of them not only manage or mismanage their internal affairs, but form alliances, exchange diplomatic representatives, and control their foreign relations. Is there a British statesman then, with a head on his shoulders, who, looking at what North America is, and must become, but must feel the necessity for binding her to the empire by some enlightened provision for the protection of her material interests for the gratification of her legitimate ambition ?

Sir, a country must have resources as well as breadth of soil. Are we destitute of these ? I think not. Between the extremes of cold and heat lies a broad region peculiarly adapted for the growth of wheat. About half of this, the peninsula formed by the great lakes, belongs to Canada. The soil of Lower Canada, of New Brunswick and of Prince Edward Island, if less fertile, is still productive. Boundless forests supply with materials for ships and with an inexhaustible export. Are there no mineral resources ? I believe that the riches of the copper mines of Lake Superior have scarcely yet been dreamed of. We know that in the lower provinces we have iron and coal in abundance. I have spoken of the St. Lawrence, but have we no other navigable rivers ? What shall we say of the noble Ottawa, the beautiful Richelieu, the deep Saguenay ? What of the broad Miramichi, of the lovely St. John ? Nova Scotia, being nearly an island has no mighty rivers, but she has what is better than them all—open harbours throughout the year. She has old ocean wrapping her around with loving embracements ; drawing down from every creek and cove and harbour her children to share the treasures of an exhaustless fishery, or to carry commodities across her bosom. Though not large, how beautiful and diversified are the lakes and streams which everywhere gladden the eye, and give to our country water carriage and water power in every section of the interior. Already Nova Scotia has shown what she can draw from a soil of generous fertility. What she can do upon the sea. Sir, I am not a prophet nor the son of a prophet, and my head will be cold long before my prediction is verified ; but I know that the day must come

when Nova Scotia, small as she is, will maintain half a million of men upon the sea. Already is she becoming remarked and remarkable for her enterprise. Taking her tonnage and applying to all the other provinces her ratio of increase since 1846, they collectively own six thousand one hundred and thirty-nine vessels, measuring 453,000 tons. We are perpetually told of the progress made by the great republic and the learned member for Annapolis ascribes all their prosperity to their union. But the North American provinces have not been united, and yet they own as much tonnage as the fifteen of the United States which I am about to name.

I take North and South Carolina, Georgia, Florida, Alabama, Mississippi, Texas, Tennessee, Kentucky, Missouri, Ohio, Michigan, Wisconsin, Oregon and California ; and, altogether they own only four hundred and fifty-three thousand nine hundred tons of shipping, or but nine hundred and forty-six tons more than the five North American provinces which have no union, no national investments, no control over their foreign relations, no representation in the national councils of the Empire to which they belong. I may be told that some of these States raise more corn, cotton or tobacco or have more manufactures than we have. I care not for these. Since the world began the nation that had the most ships, has had the most influence. Maritime countries ever take the lead in freedom, in commerce, in wealth and true civilization. Sir, let not the member for Annapolis, while he directs our attention to higher objects, fail to see in the maritime position which his country has achieved, unmistakable evidence of her energy and enterprise, and let it ever be borne in mind that the United States were a century in advance of us in point of time, and that she came into possession of all the property that the Loyalists left behind them. But, sir, take the combined tonnage of North America and you will find it equals that of Holland, Belgium and the two Sicilies, three of the maritime powers of Europe. Who then will say that we have not a mercantile marine wherewith to endow a nation ?

Scotland maintains upon the Clyde the greatest manufactory of ships in the world. Vessels glide up and down that beautiful stream like swallows round a barn, scarcely a moment passes but richly laden vessels arrive or depart with domestic manufactures, or the products of foreign climes. Go into the factories where the mighty engines for her steamers are wrought and the noise of the fabled Cyclops' cave is realized. The roar of waters behind Niagara Falls is scarcely more incessant or more deafening. And yet, sir, the tonnage of Scotland is only a trifle more than that of the North American provinces. Her whole commercial marine included but five hundred and twenty-two thousand two hundred and twenty-two tons in 1853.

At the risk of being tedious let me now turn your attention to two or three curious historical facts illustrative of this argument. Since we were boys we have all read of the Spanish Armada. We have all read of Queen Elizabeth reviewing her land and sea forces ; and preparing with grave doubts in her royal mind, to defend her sea-girt isle against the foreign invaders. This was in 1588. We read in old chronicles that England then owned but one hundred and thirty-five merchant ships. But that some were " of great size " ; some were four hundred tons, and a few reaching five hundred tons ! If my friend George McKenzie, of New Glasgow, had dashed into the midst of the maiden Queen's navy with his one thousand four hundred and forty-four ton ships, I fear that he would have shaken her nerves and astonished our forefathers of whose exploits we are so enamoured that we never think of our own. Sir, in 1702 the mercantile marine of England and Wales included only 261,290 tons ; and even as late as 1750, not a century ago, it was but 432,922 ; less than the tonnage of North America at this moment ; and yet for ten centuries prior to that period they have maintained an independent national existence.

Let me now enquire, Mr. Chairman, whether we have or have not other elements upon which to rest our claims. Is there any reason to fear that our ships will rot in the docks for want of commodities to carry, or of commercial activity ? Look to our imports of 1853 :—

Canada	£8,200,640
Nova Scotia	1,194,175
New Brunswick, 1852	1,110,600
Newfoundland, 1852	795,738
Prince Edward Island	298,543
	£11,599,696

The imports of the whole United States in 1791, sixteen years after they had established their independence, only amounted to $52,000,000 ; but a trifle over what ours are at the present time. Yet with that limited amount of commerce, they had gone through a bloody and expensive war with one of the foremost nations of the world ; whose statesmen, unfortunately, still go on dreaming that they can keep continents filled with freemen, without making any provision for their incorporation into the realm or for securing to them any control over their foreign relations.

Let me now turn your attention to the exports of British America :—

Canada	£5,570,000
Nova Scotia	970,780
New Brunswick, 1852	796,335
Prince Edward Island (about)	242,675
Newfoundland	965,772
	£8,545,562

And if we add to this amount another million, for the value of new ships annually built and sold, we may take the whole at £9,545,562. Turn again to the statistics of the United States for 1791 and you will perceive, that sixteen years after they had declared their independence, their exports amounted to but $19,000,000, or about half the value of our own.

Glance again at the parent state, from whom we have learnt so much, and to whose history we always recur with interest. She occupies a proud position now ; but what was she, commercially, a few centuries ago ?

In 1354, when the Black Prince was carrying the conquering arms of England half over France, her exports were but £212,338 ; less than one-fourth of what the exports of Nova Scotia are now. Turn to the period of the civil wars, when the people of England felt strong enough to dethrone a King and cut off his head. When Cromwell's Puritan sea warriors so raised the national character abroad, that an Englishman was secure and respected in every quarter of the globe, how limited was the trade of England then ! Even after the Restoration, so late as 1669, the exports of England and Wales only amounted to £2,063,294. I have another remarkable contrast for you, Mr. Chairman. In 1688 England secured for the first time in her history that system of acknowledged accountability which we call responsible Government. Now, from 1698 to 1701 the average exports of England and Wales did not exceed £6,449,394 ; less than our own by two millions ; not more than ours were when we claimed and established the same political safeguards. The exports of England in 1850 had risen to £175,416,000. Expanding with the principles of unrestricted commerce, their value must now be above £200,000,000. While then we look back at her days of decrepitude let us borrow hope from her small beginnings, and cherish the freedom and self-reliance which have ensured her prosperity.

But, it may be said, if you are going to look like a nation, if you wish to put on the aspect of a great combined people—you must have some revenues to support your pretensions. Well, sir, look at the revenues of these provinces under tariffs remarkably low :—

Canada collects	£1,053,026
Nova Scotia	125,000
New Brunswick	125,000
Prince Edward Island	35,345
Newfoundland	84,323
	£1,477,694

We raise this amount now without any extraordinary effort, with but a very inefficient force to collect, without anybody feeling that it is collected ; the sum is not large, but other people, even in trying times, have had less ; and see what they have done with what they had. Take the United States. At the Declaration of Independence the revenue of the thirteen states was but $4,771,000, or £1,200,000, so that when those thirteen colonies entered upon a mighty struggle with the parent state they had less revenue, by $300,000, than these five provinces have now. But, sir, we are told every now and then, that there is something in these northern regions adverse to the increase of population. That the Mayflower may flourish under our snowdrifts but that children will not ; that, compared with the so-created powers of the "sunny south" here they must be "few and far between." I deny the impeachment. In the North marriage is a necessity of nature. In the South a man may do without a wife, but in the long cold nights of our winters he cannot sleep alone. Large, vigorous, healthy families spring from feather beds in which Jack Frost compels people to lie close. The honourable member for Annapolis showed us, yesterday, that the inhabitants of Canada have increased sixty-eight per cent. in ten years. New Brunswick has advanced in about the same ratio, while Nova Scotia has quintupled her population in fifty years. At the same rate of increase Nova Scotia will count her population by millions before a new century begins and British America—taking every means of calculation into account—will probably then contain at least ten millions of people.

If then, Mr. Chairman, the British and colonial statesmen at the present day, cordially co-operating, do not incorporate this people into the British empire or make a nation of them, they will, long before their numbers have swelled so much, make a nation of themselves. Let me not be misunderstood, sir, I shall say nothing here that I would not utter in the presence of the Queen. If disposed to declare our independence to-morrow, I do not believe that Her Majesty's Government would attempt to prevent us by force. If they did, they would fail. But what I want them to understand is this, that they lost one-half of this continent from not comprehending it, and that just so sure as they expect a sentiment of loyalty to attach the other half to England while the people of two small islands divide the distinctions and the influence of empire among them, they will by and by be awakened by the peaceful organization of a great country, whose inhabitants must be Britons in every sense of the word, or something more.

This may seem to be vain and arrogant language, and I may be asked to support it by some reference to the ultima ratio of nations—physical force. Taking our population at two millions and a half, every fifth person should be able to draw a trigger, giving 500,000 men able to bear arms. Such a force would be powerless as an invading army, but in defence of these provinces, invincible by any force that might be sent from abroad. Put into these men the spirit which animated the Greek, the Roman, the Dutchman or the Swiss;

let them feel that they are to protect their own hearthstones; and my word for it, the heroic blood which beats in their veins will be true to its characteristics. How often have we heard that our republican neighbours "down south" were going to overrun the Provinces. They have attempted it once or twice, but have always been beaten out and I do not hesitate to say, that the British Americans, over whom the old flag flies, are able to defend every inch of their territory, even though Her Majesty's troops were withdrawn. Indeed, sir, if these 500,000 men are not able to defend our country, they deserve to be trodden down and made slaves of for the rest of their natural lives.

Why, sir, the standing army of Great Britain, charged with the defence of an Empire including provinces in every quarter of the globe, numbers but 120,000 men; in war this force is raised to 380,000; so that North America can muster for the defence of our own soil more men than are required to maintain the honour of the Crown or the integrity of the Empire at home and abroad. The whole standing army of the United States includes but 10,000 men, a number that we could call out in a day from our Eastern or Western counties. Sir, my honourable friend from Pictou has only to sound the Pibroch in the county he represents, and 10,000 sons of the heather, or their descendants, would start up with musket and claymore, and I am not sure that there would not be bagpipes enough found in the county to cheer on the warriors with the wild music of a martial nation. Why, sir, the old thirteen colonies, sixteen years after their Declaration of Independence, deducting slaves, had but a little over three millions of people; while at the Declaration of Independence of 1775, they had only two millions two hundred and forty-three thousand all told, or a smaller physical force than we have now.

My father used to tell me curious old stories of the colonial army that went to take Louisbourg. The whole New England force fitted out for that expedition was but 4,070 strong. Just about as many as, upon an emergency, the leader of the Opposition could turn out from the county of Annapolis. I should not like to see him clothed in more warlike habiliments than those he usually wears; but if he fancied military command, I am quite sure that he could enroll in his own county 4,000 as daring and gallant warriors as went to the capture of Louisbourg. I do not think that I am mistaken when I say that the women of that county are as well worth fighting for as any on this continent, and that they can regale their defenders on the best cheese and apple pies that are to be found on either side of the line.

But we have all heard of another armament, some of the wrecks of which, on a calm day, may still be seen reposing at the bottom of Bedford Basin. I mean the great fleet fitted out by France for the conquest of the old colonies, under the Duc d'Anville. That fleet consisted of seventy sail, but it transported across the broad Atlantic but three thousand one hundred and fifty fighting men. An armament that this Province alone should defeat in a single battle. At the battle of Bunker Hill there were but three thousand men on one side and two thousand on the other. Though there was a fair stand-up fight, the physical force engaged was nothing compared with the great political principles which have rendered the conflict immortal. I turn to Scotland again to keep my honourable friend from Pictou from going to sleep. He has heard of Bannockburn. Well, at that great battle which secured the independence of his country, there were but thirty thousand Scots engaged; about half as many men as Nova Scotia could arm to-morrow, if an emergency demanded an appeal to physical force.

In 1745, 6,000 Scotchmen marched to Derby, in the very heart of England, "frightening the isle from its propriety"; and at the battle of Culloden, where the power of the Stuarts was finally stricken down, there were but 4,000 Scotchmen engaged, with muskets a great deal worse than those which we affect to despise.

At the union of England and Scotland in 1707, the population of the latter country was but one million and fifty thousand; her shipping not fifty thousand tons; her revenue only £110,694. These facts are curious, for with such apparently straitened resources Scotland had maintained her national independence for ages; often fighting great battles and passing through fiery trials. Where, sir, is my friend the Financial Secretary? He wants something to lend dignity to the dull figures which he pores over day by day. Let me assure him that he need not fear to contrast his revenue of £125,000 with that of Scotland at the union. As late as 1766 the shipping of Scotland measured but 32,818 tons, but a trifle over what it was a century before, while ours has increased enormously in the same period of time.

Historical events, which genius illustrates, dazzle us, as stage plays do, so that we rarely count the strength of the company, or measure the proportions of the scene. The Royalist army at Marston Moor mustered but twenty thousand men, and yet the Crown of England hung upon the issue. The Scots at Dunbar had but an equal number. Three such armies could be furnished by Nova Scotia alone. I am often amused at the flippant manner in which our old arms are spoken of; but at Nasby King Charles had only "twelve cannons," and they were not much better than those which are used for firing salutes at our mud fortresses in Guysborough and Lunenburgh. Why, at the battle of Cressy there were but thirty thousand Englishmen—about one-half of the militia of Nova Scotia. At Poictiers there were but twelve thousand, fewer men than our friends from Cape Breton could muster without drawing a man from the main. Man for man, then we have in North America force enough to fight over again all the great battles that emblazon our national history; that is, if the blood of the sires has descended to their sons, and if the mercurial atmosphere of the north, which ought to lend it vivacity, does not render it sluggish and inert.

You will be amused to find that Frederick the Great had only two and a half millions of people to develop his schemes of conquest, and to defy a world in arms. So that nobody ought to be surprised if two and a half millions of British subjects, accustomed to the forms and securities of freedom, physically as enduring, and intellectually as intelligent should at least ask for the same political status as the Cockneys of London or the weavers of Manchester.

But it sometimes is said by politicians for party purposes, that all the world is advancing faster than we are. Is it so? Take Halifax for example. It numbers 25,000 inhabitants. How many cities in the whole United States are larger? Only twenty-one. Montreal has 60,000 people; there are only eight cities in the republic more populous.

Let us now, sir, turn to another aspect of the question. If we have got the resources, the trade, the territory, the men and the cities to begin with, have we not got the freedom? Look to your old monarchies or recent republics and see if any of them have exhibited any more of the love of liberty, or the capacity for securing its practical enjoyment than we have. The very tone of this debate proclaims Nova Scotia a free country, and whatever we may lack, we have the first best gift of God to man; freedom of thought, of speech and of public discussion. The people of this country select every public officer, from one end of it to the other, either directly or by their representatives, with one single exception. The Lieutenant-Governor alone is appointed by the Imperial Government; we have more power over those who manage our affairs than they have in England, where the Peers are permanent—the Crown hereditary. Our people, in their town meetings, do their local business; this Legislature forms the administration and sustains it. We are as free as any people in Europe, Asia or Africa; and as for America, I believe the principles of the British constitution secure a sounder

state of rational freedom than the constitution of the republic. And, sir, let us bear in mind, that these form the only cluster of colonies that have devised a system which makes freedom compatible with allegiance, and to whom free institutions have been conceded. I recollect, when in England three years ago, meeting delegates from Australia and the Cape, in search of constitutions for their colonies. I told them that we had a very good one in Nova Scotia which they ought to copy. But their heads were filled with theories, repudiating, as we have done, the principles of the British Constitution, they saw visions and dreamed dreams. The delegates from the Cape wanted an elective council, the members to be elected by the constituency of the whole colony. I tried to make him understand that canvassing a county in Nova Scotia was no joke and that before a gentleman got through his canvass of the whole Cape Colony he would either be devoured by lions or shot by Kaffirs. My friend would not believe me, but before he got home the Kaffir war broke out and I fear that he has been either killed or eaten before this, while in search of his new constitution.

If you look across the border, Mr. Chairman, we have in some respects not much to envy. I have never sought to disparage the United States. Familiar with their early history, their trials, their achievements and their blunders, I give them credit for all they have accomplished and make liberal allowance even for their mistakes. They speak the same language and are descended from the same ancestors ; but have they more rational liberty than we have ? Until recently they might boast of their universal suffrage which we had not ; but we have it now, and even the member from Annapolis tells us that their institutions are more conservative than ours. As regards public burdens, how do matters stand ? The United States, with a population of 30,000,000, owed in 1846 $224,000,000, or $7.00 to each inhabitant of the country. Nova Scotia, with a population of 300,000, owes but £100,000 (half of it paying four per cent. and the other half paying nothing), or about one dollar twenty-five cents for each inhabitant. Even if our railroads were completed and were entirely unproductive, we would have the use of them at all events ; and even then, we would not be as deeply in debt as are, at this moment, the prosperous United States.

I think, then, Mr. Chairman, it is obvious that whether we take extent of territory, rivers and lakes, extent of sea coast, natural resources, shipping, imports and exports, revenue, ratio of increase, physical strength, size of cities, the enjoyment of freedom, general education, or activity of the press—we are entitled to form a nation, if so disposed, and to control our foreign relations as well as our domestic affairs.

How can this be done ? In various ways ; and, sir, I shall discuss the modes with the same freedom as I have done the means. What would be the advantages of that step ? All commercial questions now agitated between the two countries, would be settled at once ; we should have unlimited intercourse with the sea-board of that great country and free trade from Maine to California. Our public men would no longer be depressed with the checked aspirations of which the member for Annapolis spoke last night. Every North American whose pride is now wounded by degrading contrasts , would be eligible to the highest offices and positions —not in a colony, but in a nation ; and we should enjoy perpetual peace with our neighbours along fifteen hundred miles of frontiers. Sir, I do not deny that any man who sincerely and honestly advocates annexation to the United States has powerful arguments in his favour. I am opposed to it, and would resist such a step by all means within my reach. I believe it would be, unless forced upon us, morally wrong, being a violation of our allegiance and a breach of faith plighted to our brethren across the water for more than one hundred years. Of course, if they expect us to be colonists for ever, and

make no provision for our being anything else; upon their heads, and not upon ours, be the consequences of the separation, which when this is apparent, will be inevitable. I prefer a full incorporation with them in one great empire; free participation with them in its good and evil fortunes, its perils and its distinctions. All this I believe to be practicable and shall not despair of its fulfilment.

But, sir, there are other considerations which would deter me from any thought of annexation. At the revolutionary struggle the Loyalists were driven seaward, they lost their homes, right or wrong, acting on their honest convictions and I rejoice that, whether right or wrong, believing themselves right, they had the courage, and enterprise, and energy, so to act. They sacrificed everything but the principles. Their property was confiscated and they cast their lot into a comparative wilderness. They and their descendants have made it to "blossom as the rose." They have fraternized with the French-Canadians and Acadians. English, Irish, Scotch and German emigrants have gradually come over to be incorporated with them to fill up the country to form one race; so that North America presents the outline of a great improving and self-dependent community. Sir, the Loyalists left all they owned in the United States, and their possessions were merged in the general property of the union. The Republicans cannot restore it to us and I should be ashamed to go back to tell them, "our fathers made a great mistake, they thought their glorious flag and time-honoured institutions worth preserving; but we, their sons, with a territory larger than yours, and a population larger than you had when you framed your constitution; with education that our fathers taught us to prize; free of debt and at peace with all the world, are not fit for national existence, are unable to frame a constitution, but come back after a separation of seventy years and ask to take refuge under the Stars and Stripes!"

No! Mr. Chairman, I for one will never prefer such a craven request.

Sir, I believe annexation would be unwise for another reason. I believe the United States are large enough already. In a few years the population of that country must reach one hundred millions. They have as much work to do now as they can do well; and I believe before many years, if their union be preserved, they will have more work to do than any legislature can despatch, after their modes, in 365 days. Congress now sits for half a year. Our Legislature occupies about ten weeks; that of New Brunswick, about the same time. In Canada the session often lasts three or four months. So that if annexation were seriously contemplated there would be no time in the national congress to get through with the work that ought to be well and wisely done. There is another question which must be settled before you or I or any Nova Scotian will be party to annexation. Sir, I believe the question of slavery must be settled sooner or later by bloodshed. I do not believe it can ever be settled in any other way. That question shadows the institutions and poisons the springs of social and public life among our neighbours. It saps all principles, overrides all obligations. Why, sir, I did believe until very lately, that no constable, armed with the law, which violated the law of God, could capture a slave in any of the Northern States. But the Fugitive Slave Law has been enforced even in Puritan New England, where tea could not be sold or stamps collected. British North America, sir, has not a slave in her boundless territory; and I, for one, would never cast my lot in with that of the people who buy and sell human beings, and who would profane or soil with the Fugitive Slave Laws, or involve us in agrarian war for the preservation of an institution that we despise. There is another reason that would make me reluctant to be drawn into the vortex of the republic. There might come cause for conflict between that country and Old England. Sir, there is not a man in this Assembly who does not aspire

to hold his head as high as the head of any other man on earth ; but I trust, nay, I know, that there is not one who would raise his hand in hostility against that revered country, from whose loins we have sprung and whose noble institutions it has been our pride to imitate. If the slave states could be cut off, and the free states could be combined with us, in perpetual peace with England, we might see nothing objectionable in a union such as that.

Having discussed the question of annexation, let me inquire how else could we organize ourselves into a nation ? By forming North America into a kingdom or confederation by itself, and establishing friendly connections with other countries, with the entire concurrence of our brethren at home. I agree with the member for Annapolis, that there would be great advantages arising from a union of these colonies. But there must be differences of opinion as to the various modes of accomplishing that object. We may have a king or a viceroy and a Legislature for the whole of North America ; or we may have a federal and democratic union. The advantages of the first would be a strong executive, a united Parliament, the Crown hereditary, distinctions permanent. But there would be disadvantages. Such a government would be expensive, there would be no peerage or feudal bulwark to sustain a sovereign ; and we might get a dynasty of knaves, fools or tyrants. We should have a monarchical and democratic elements warring for ascendency, and our people would soon feel the loss of their local Legislatures. What has been the complaint of Ireland for years ? That there was no Parliament in College Green. Of Scotland at this moment ? That there is no Parliament at Holyrood. A higher description of talent, a more elevated order of men, in a united legislature would not compensate the people for the loss of local legislation which they have enjoyed for a century. By a Federal Union of the Colonies we should have something like the neighbouring republic ; and if I saw nothing better, I should say at once, let us keep our local Legislatures, and have a President and Central Congress for all the higher and external relations of the United Provinces. We should then have nationality with purely republican institutions. But if we so far change our organization, we must substitute American precedents and practise for British. We now refer to Hatsell, as our guide in Parliamentary perplexities. We should then have to take the practice of the neighbouring republic. There might be one disadvantage in having a king or a viceroy. The Queen across the water, because the Atlantic rolls between us, offers nothing obnoxious to the prejudices of our American neighbours. But once establish a monarch or viceroy here and I am not quite sure that we would not have a fight to maintain him on his throne, with those who apprehended danger from our example. Under a Federal Union we should form a large and prosperous nation, lying between the other two branches of the British family, and our duty would evidently be to keep them both at peace.

But, sir, I will say to the member for Annapolis that before we can have this organization or any other we must have railways. The company which has made a line of railway from Hamilton to Windsor, Canada West, deserve great credit for their enterprise and energy. I admit that the Grand Trunk Company of Canada is preparing to connect a large part of that country with these indispensable lines of communication ; but, sir, it will take years to complete what Canada has begun; and then we have New Brunswick between us. It is clear we cannot have a united Parliament without railroads ; for if any of us were summoned to Quebec tomorrow we should have to travel from the end of our own country to its metropolis through a foreign state. We must have railroads, first ; and then take my word for it, the question we are now discussing will assume a form and shape that would soon lead to a tangible solution. Once put my honourable friend from Clare (Mr. Comeau, a French Acadian) on a railway, and send him up among the

inhabitants of Lower Canada, and he would feel no longer as a poor colonist, but as one of a million of men, speaking the same language, animated by the same hopes, participating in kindred aspirations. Let him see the noble St. Lawrence and the lakes that lie beyond; let him survey the whole of this magnificent country that God has given to his race, and to mine on this side of the Atlantic, and he would come back to meet, without a blush for her capacity, or a fear for her fortunes, an Englishman, an Irishman, a Scotchman, a German, a Frenchman or even a republican, from across the border. Overspread the Colonies with railways and I care not what you have, —a united Congress or nothing. The people of British America will then be united, and will soon assert the position which they will feel their capacity to maintain.

Pondering on these themes, sir, my mind ever turns to an old statesman, who has gone I trust to Heaven, but whose name will be dug up, and whose writing will be read with interest in years to come, on both sides of the Atlantic—I mean old Governor Pownall. Looking through the strife and passion which preceded the American Revolution, through the fire and smoke of it, at the stupid prejudices and blunders which it engendered and has entailed, it is curious to see how a calm mind and sagacious intellect penetrated into the philosophy of a great controversy, and would have laid the foundations of the empire in mutual confidence and respect. What was his advice when the rebels of the Colonies were preparing their muskets and the statesmen of England were deaf and blind? He said:—"You are one family—the ocean divides you; you must have different forms of government, but that is no reason why you should not be a united family; arbitrate on disputed points; keep the peace; have distinct forms of government, if you please, but establish a zolverein, and let there be perpetual amity and free trade between the British races on both sides of the Atlantic." Had his advice been taken, the revolution would never have occurred; we should have been spared the second war; and the paltry jealousies which any sneering scribbler or unprincipled politician may now blow into a flame, would never have existed.

Let us, as far as we can, lend ourselves to the realization of this grand idea. I feel now as I felt yesterday, that every word which dropped from the member for Annapolis was pregnant with meaning, and full of interest. Let us suppose, sir, that our railroads were finished, and that we had the rapidity of intercourse necessary for union. Are there, then, no difficulties in the way? First, the French Canadians may not favour a union. I should like to be assured that they did; but certain facts have given me a contrary impression. Upper Canada favours a union, because the people there think it would tend to keep the French Canadian influence down. That view of the matter has been propagated in Lower Canada, and it has raised prejudices which cannot, perhaps, be easily overcome. The Lower Provinces would never sanction inequality or injustice of any kind; but yet the French Canadians may have their fears. My honourable friend from Clare might, indeed, be sent up as a missionary, to convince his brethren that we would not be less just to them than we are to him; that Nova Scotians treat those of French descent as brethren, who are never permitted to feel any political, religious or social distinctions. The prejudice may be overcome, but it exists in Canada, and may be found a difficulty in the way of a union of the Colonies.

There are other difficulties. If a project of union is to be discussed, let the proposition come from the other Provinces. For various reasons, I have but little desire to reopen intercolonial negotiations about anything just now. The seat of government would be a knotty question; the large debts that Canada has contracted, another. The New Brunswick papers invite the Lower Provinces to form a union, with Amherst or Sackville for a capital.

The former would be most convenient for me, for I should live in the midst of my constituents. If we have a confederation of all the Provinces, the capital should be Quebec—the natural fortress—the Gibraltar of British America. Montreal is indefensible, and I put Halifax out of the question, as it is not central.

But suppose, sir, we were united to-morrow. Might we not have some diversities of interest? It is just probable that the farmers of Western Canada, in their anxiety to get their wheat into the United States, might throw our fisheries overboard. The member for Annapolis hopes such would not be the case; so do I. But he will agree with me, that the interests of all the Colonies are not the same in every respect; and what we have to fear is, that the smaller Provinces may be swamped, and their interests sacrificed, for the benefit of their more populous neighbours. Past experience leads me to guard against such a contingency, for I know that in negotiations which deeply stirred the hopes of our people, Canada has been satisfied to sacrifice national and provincial interests, for not very weighty nor very worthy considerations.

There is yet another position, Mr. Chairman, which North America may aspire to; and to my mind it presents a solution of all the difficulties which attach to this question in other directions. I think the time is rapidly approaching, when there must be infused into the British Empire an element of strength which has scarcely yet been regarded. North America must ere long claim consolidation into the realm of England as an integral portion of the Empire, or she will hoist her own flag. Let us look at this proposition in its broadest light and in its local bearings. We are, and ever will be, a commercial people. It is our interest to have free trade, and close alliance with the largest number of human beings who produce and consume; who have commodities to carry, and who will give the greatest activity to our commercial marine; provided always, that our security and honour can be as well maintained. Suppose Nova Scotia were to form a union with New Brunswick and Canada, to-morrow, and they were all to withdraw from the empire, as they will, if not elevated to equality with their British brethren. Sir, I do not undervalue the claims or standing of the Colonies; but we would withdraw from an empire peopled by hundreds of millions, and unite our fortunes with but two and a half millions of people, with an exposed frontier of fifteen hundred miles, and with no fleets and armies to spare, to protect our sea coast. Suppose we should prefer annexation to an independent national existence; we should become allied to but thirty millions; and though the proportionate advantages would be greater, the loss by withdrawing from the mother country would be immense. We should be part of thirty millions of people, it is true; but they have neither troops nor ships of war to spare to aid us in any great emergency, and they would have enough to do to defend themselves. Now, sir, let me claim your attention for a moment, while I develop another view of this question. What is the British Empire? Look at the outlying portions of it, which contain:—

	Inhabitants.
West Indies	900,000
Australia	307,645
Africa	218,908
Ceylon	1,506,326
Mauritius	159,243
New Zealand	204,000
India	94,210,218
	97,506,340

This includes the colonial portion of the empire strictly speaking, but to the 97,000,000, three times the population of the United States, we must add 133,110,000, being the population of states which are our allies or tributaries in the East Add again 30,000,000, the population of the British Isles, and we have in round numbers, 260,000,000 of people within the boundaries, or subject to the influence of the empire, to which we at present belong. All the states of Europe include but 233,000,000 of people. Then, sir, I ask, will any Nova Scotian who pretends to be a statesman, will any North American, with his heart in the right place, lightly entertain the idea of withdrawing from the enjoyment of free commercial intercourse with 265,000,000 of human beings; from participation in the securities, the sources of pride which such an empire affords, to form, without cause, an isolated community of two millions and a half, or even ten millions, or to seek a dishonourable share of the advantages enjoyed by thirty millions?

While, however, we value our connection with the empire highly, let not British statesmen, too intent upon the intrigues and squabbles of Europe, undervalue our resources, our claims, our pride in that connection, or our physical force to achieve another whenever this becomes irksome. All that I seek for is entirely compatible with our present relations; by elevating North Americans to the common level with our brethren at home, I would but draw the bonds which bind us closer together. There is no necessity to endanger the connection, commercial or physical or international, which we enjoy in common with so many human beings. "Ships, colonies and commerce" have long formed the boast of Old England. Ships we have in abundance. Her colonies are ours. The empire includes every climate which the sun diversifies, every soil, every race of men, every variety of production. It is guarded by the largest fleet and the best disciplined army in the world. It has for its metropolis the most populous city of modern times. The nursery of genius and the arts. The emporium of commerce, the fountain-head of capital, the nursing mother of skilled labour, in every branch of manufactures. Let us then, not cast about for new modes of political organization until we have tested the expansive powers and intellectual capabilities of what we have. Let us, then, demand with all respect, the full rights of citizenship in this great empire. It is clearly our interest to do this. Surely it is congenial to our feelings. Sir, I would not cling to England one single hour after I was convinced that the friendship of North America was undervalued, and that the status to which we may reasonably aspire had been deliberately refused. But I will endeavour, while asserting the rights of my native land with boldness, to perpetuate our connection with the British Isles, the home of our fathers, the cradle of our race. The union of the colonies is the object of the resolution, in my judgment such a proposition covers but a limited portion of ground which the agitation of that subject opens up. What questions of importance have we to settle with Canada, New Brunswick or any of the other colonies? We have free trade and friendly relations with them all. What have we to ask or to fear? What questions are at issue with the United States? None but that of a reciprocal trade, which would have been settled long ago, if North America had had a voice in the making of treaties and in the discussions of the Imperial Parliament. But have we not questions of some interest to adjust with the mother country? There is one, of more importance than any other except the railroads,—the question of our mines and minerals. Does any man believe that any company would have monopolized for thirty years the mines and minerals of an entire province, had British America been represented in the Imperial Parliament? That monopoly would go down before a searching investigation for a single night in the House of Commons. No Minister could justify or maintain it. Here there is no difference of opinion. But what avails our unanimity? The battle is to be fought

in England, but here it never is fought and never will be, until we have a representation in Parliament or until the Legislature votes £5,000 for a luminous agitation of the question. I yield to the association all that I have ever said in its favour. I would do it justice to-morrow had I power to do injury, but I do not believe that one Nova Scotian within the walls of Parliament would do more to reclaim our natural rights in a single year, than the Legislature could do, by remonstrances in seven.

Take the question of the fisheries. Your fisheries, including all the wealth that is within three marine miles of a coast fronting upon the ocean for five thousand miles, are at this moment subject of negotiation. What have you got to do with it? What influence have you? Who represents you in London or in Washington? or discusses the matter in your behalf? The British Minister, pressed upon by the United States on the one hand, and by the prospect of a war with Russia on the other, may at this moment be giving away our birthright. Tell me not of your protest against such an act of spoilation. It would amount to nothing. Once committed, the act would be irrevocable, and your most valuable property would be bartered away for ever. Sir, I know what gives influence to England, what confers power here—the right and the opportunity of public discussion. Your fisheries, if given away to-morrow would scarcely provoke a discussion in the House of Commons; but place ten North Americans there, and no minister would dare to bring down a treaty by which they were sacrificed. How often have questions in which we took a deep and abiding interest been decided without our knowledge, consultation or consent? I am a free trader, and I am glad that unrestricted commerce is the settled policy of the mother country, as it is of this. But can I forget how often the minister of the day has brought and carried out commercial changes which have prostrated our interests, but in the adoption or modification of which we have had no voice? Sir, with our free Legislatures, and the emulation and ambitious spirit of our people, such a state of things can not last for ever. Is there a man who hears me, that believes that the question of the fisheries can be settled well, or ought to be settled at all, without those who are most interested, being represented in the negotiation?

What is taking place at this moment in the old world invests this argument with painful significance. Notes and diplomatic messages are flying from St. Petersburg to Vienna, and from Vienna to London. A despot is about to break the peace of the world, under pretence of protecting the Greek religion. A fleet of Turkish ships has been sunk in the Black Sea. The Cunard steamers have been taken off the mail routes to carry troops to the Mediterranean. To-morrow may come a declaration of war; and when it comes, our six thousand vessels, scattered over the ocean, are at the mercy of England's enemies. Have we been consulted? Have we had a voice in the Cabinet, in Parliament, or in any public department by whose action our fleet is jeopardized? No, sir, we have exercised no more influence upon negotiations—the issue of which must peril our whole mercantile marine—than if we had had in danger but a single bark canoe.

I do not complain of the statesmen of England. I believe that Lord John Russell and the other members of the Cabinet are doing their best for the honour of old England, and for the welfare of the Empire. But I will not admit that they have the right, at the present day, to deal with subjects which so largely affect the interests and touch the feelings of two million five hundred thousand people, scattered over millions of square miles of land, whose canvas whitens every sea—without our being consulted.

(Mr. Howe next turned to the United Services, and showed how slight was the chance of British Americans to rise in the army and navy. Their brethren at home had more money to purchase; they had all the Parliamen-

tary interest to insure promotion. What inducements had our young men to enter either service? He had five boys, but he would as soon throw one of them overboard as send him to compete where the chances were all against him; to break his heart in a struggle where money and friends, not merit, would render emulation vain.*)

The statesmen of England, sir, may be assured, that if they would hold this great empire together, they must give the outlying portions of it some interest in the naval, military and civil services; and I will co-operate with any man who will impress upon them the necessity for lengthening the ropes and strengthening the stakes, that the fabric which shelters us all may not tumble about our ears.

I now turn, Mr. Chairman, to a topic upon which it may readily be supposed I feel keenly—the negotiations touching our intercolonial railroads. To impress the minds of Imperial statesmen with the truly national character of the works we had projected, I spent six months in England. Here was a noble scheme of internal improvement, requiring about £7,000,000 sterling to carry out. Had it been a question about holy places in Turkey, or some wretched fortress on the Danube, seven millions would have been risked or paid with slight demur. The object was, however, to strengthen and combine four or five noble Provinces, full of natural resources and of a high-spirited people; but, unfortunately, with no representation in the National Council of the Empire to which they belong. The single guarantee of England would have saved us nearly half the cost of this operation, or £200,000 a year. The Queen's name would have been stamped upon every engine running through one thousand five hundred miles of her dominions. On the hearts of two millions five hundred thousand people would have been stamped the grace of the act, which, while it cost nothing—for our revenues were ample enough to pay principal and interest had the roads been unproductive—would have awakened grateful recollections and a sense of substantial obligation for a century to come. At last, by the true nobility of the enterprise, rather than by the skill of its advocate, Her Majesty's Government consented to give the guarantee. The Provinces were proceeding to fulfil the conditions, when, unfortunately, two or three members of the Imperial Parliament took a fancy to add to the cost of the roads as much more as the guarantee would have saved. It was for their interest that the guarantee should not be given. It was withdrawn. The faith of England—till then regarded as something sacred—was violated; and the answer was a criticism on a phrase—a quibble upon the construction of a sentence, which all the world, for six months, had read one way. The secret history of this wretched transaction I do not seek to penetrate. Enough is written upon stock-books, and in the records of courts in Canada, to give us the proportions of that scheme of jobbery and corruption by which the interests of British America were overthrown. But, sir, who believes, that if these Provinces had ten members in the Imperial Parliament? who believes—and I say it not boastingly—had Nova Scotia had but one, who could have stated her case before six hundred English gentlemen, that the national faith would have been sullied or a national pledge withdrawn?

There are other questions of equal magnitude and importance to the empire and to us. Ocean steamers, carrying British mails past British Provinces to reach their destination, through a foreign State; emigration uncared for and undirected flowing past them, too; or, when directed, sent at an enormous cost to Australia, fourteen thousand miles away, while millions of acres of unsurpassed fertility remain unimproved so much nearer

* Two Cadetships in the Navy, annually, have since been given to Canada: one to Nova Scotia and one to New Brunswick. This is a move in the right direction, for which the ministers deserve much credit.

home. Upon these and other kindred topics I do not dwell. But there is one to which I must, for a brief space, crave your attention.

Sir, I do not envy our neighbours in the United States, their country, their climate, or their institutions. But what I do envy them is, the boundless field of honourable emulation and rivalry in which the poorest man in the smallest State may win, not mere colonial rank and position, but the highest national honours. Here lies the marked distinction between Republican and British American. The sons of the rebels were men full-grown; the sons of the Loyalists are not. I do not mean that physically or mentally there is any difference; I speak of the standards and stamps by which the former are made to pass current in the world, while the latter have the ring of metal as valuable and as true. This was the thought which laboured for utterance in the mind of the member for Annapolis yesterday. Let me aid it in its illustration. Some years ago I had the honour to dine with the late John Quincy Adams, at Washington. Around his hospitable board were assembled fifteen or eighteen gentlemen of the highest distinction in the political circles of that capital. There were, perhaps, two or three, who, like Mr. Adams himself, had been trained from early youth in diplomacy, in literature, and in the highest walks of social and public life. These men were superior to any that we have in our Colonies, not because their natural endowments were greater, but because their advantages had been out of all proportion to ours. But the rest were just such men as we see every day. Their equals are to be found in the Legislatures and public departments of Canada, New Brunswick and Nova Scotia; men superior to most of them have been on this floor every session for twenty years. Their equals are here now. But how different are the fields of emulation; how disproportioned the incitements to excellence, the distinctions, the rewards. Almost every man who sat round me on that night either then enjoyed, or has since won some national distinction. They were, or are now, senators in the National Council, foreign ambassadors, Governors, Secretaries of State, commanders of squadrons, or leaders of armies.

Sir, my heart rose when I compared these men with those I had left at home, their equals in mind and manners. But it sunk, aye, and it sinks now, when turning to the poor rewards which British America offers to those who run with these men the race of emulation. What national distinction ever lights upon British America? Has she ever supplied a Governor to the Queen's widely extended Dominions, a Secretary, or an under Secretary of State? Have we ever had a man to represent us in either House of Parliament, or in any Imperial department? How long is this state of pupilage to last? Not long. If British statesmen do not take this matter in hand, we soon shall. I yield to no man in respect for the flag of my fathers, but I will live under no flag with a brand of inferiority to the other British races stamped upon my brow.

(Mr. Howe here contrasted Mr. Johnston, Mr. Huntingdon, Mr. Wilkins, the Speaker, with those who had governed the Colonies within his own observation. He thought the learned leader of the Opposition would make quite as good a Governor as some that had been sent across the Atlantic. He convulsed the House with laughter in describing the attentions paid at Liverpool to a whiskered Yankee, who was the bearer of dispatches from Washington, and who, with a huge bag under his arm, that might have contained his wardrobe, was instantly permitted to land, unquestioned and unsearched. "I," said Mr. Howe, "was also the bearer of dispatches from a British Governor to Her Majesty's Secretary of State. I represented the Province of which I am a native, and the government of which I was a member. I explained my position, and showed my dispatches, more in jest than in earnest, for I knew what the result would be. The Yankee was in London long be-

fore I could get my portmanteau through the Custom House, being compelled to pay duty on half a dozen books and plans necessary to the success of the mission with which I was charged. Imagine what five and twenty British Americans on board the steamer would feel at this practical commentary on the respect commanded in England by successful rebellion, but denied to devoted loyalty. Equally animated was Mr. Howe's description of Massachusetts cotton spinners and backwoodsmen from the west, snugly ensconced in the diplomatic box in the body of the House of Lords, when Parliament was opened by the Queen, while Colonists looked down upon them from the galleries, to which, not as a right, but as a favour, they had been admitted.")

Mr. Chairman, the time will come—nay, sir, it has come—when these degrading distinctions must no longer peril our allegiance. Will any man say that North America does not produce men as fit to govern States and Provinces as those who rule over Maine or Massachusetts at this hour ?—as most of those who are sent to govern the forty Provinces of the Empire ?—as many that we have seen sent to darken counsel and perplex us in the west ? How long will North Americans be content to see their sons systematically excluded from the gubernatorial chairs, not only of the Provinces that we occupy, but of every other in the empire ? Not long. If monarchial institutions are to be preserved and the power of the Crown maintained, the leading spirits of the empire must be chosen to govern Provinces ; and the selection must not be confined to the circle of two small islands,—to old officers or broken-down members of Parliament.

Look at the organization of the Colonial Office ; that department which is especially charged with the government of forty Colonies and yet has not one Colonist in it! How long are we to have this play of Hamlet with Hamlet himself omitted? Sir, I do not share in the vulgar prejudices about the ignorance and incapacity of Downing Street. No man can now be elevated to the office of Secretary of State for the Colonies who is not a man of business habits, holding high rank in either House of Parliament. There is, perhaps, not a man in the department who is not able or adroit in the performance of duties which are admirably subdivided. The under secretaries are men of genial manners, high attainments and varied information. They are something more ; they are thoroughly well disposed to serve, and to stand well with the Provinces committed to their charge. But what then ? They have no personal knowledge of Colonial public or social life ; no hold upon the confidence or the affections of the outlying portions of the empire. Compared with the men who might, and ought, and must be there, if the empire is to be kept together they are what the clever secretaries of the old board of trade were in 1750, compared with such men as Franklin, Washington and Adams. What these last were then, the Baldwins, Lafontaines, Chandlers and Wilmots of North America are now. I speak not of Nova Scotia, although I know that her sister Provinces accord to her the intellectual rank to which she is entitled. I know the men who sit around me here ; already I can hear the heart-beat of the generation which is springing up to take our places ; and I do not hesitate to say that room must be made on the floors of Parliament, and within the departmental offices of England, for the aspiring and energetic spirits of this continent ; or they will, by and bye, assert their superiority in the intellectual conflict with those who attempt systematically to exclude them must provoke. Talk of annexation, sir ! what we want is annexation to our mother country. Talk of a union of the Provinces, which, if unaccompanied with other provisions, would lead to separation ! What we require is union with the empire ; an investiture with the rights and dignity of British citizenship.

In the United States, every forty thousand people send a member to Con-

gress. North America has sixty-two times that number, and yet sends not one member to the National Council which regulates her trade, controls her foreign relations, and may involve her at any moment in war. Mark the effects of the American system. The discovery of gold threw into California in two or three years a large and heterogeneous and comparatively lawless population. California was many thousands of miles away from Washington and from the old States of the Confederation. It was essentially a Colony; and, under our system, would have been so treated for a century. Our neighbours are wiser in their generation. Hardly were the rude communities of California formed, while women were sleeping under tents and men under wagons; while Judge Lynch presided over the Judicatory, and the beter class hung thieves in the market square; the citizens met together, formed their constitution, provided for education, and elected three or four men to represent California in the National Congress of the United States. Nova Scotia has been a loyal Province of this empire with all securities of law, and the refinements of civilization, for an hundred years, and to this hour has no such privilege. What binds that rude Californian community to the parent States? The presence of her four or five representatives in the National Council. They may be negligent, incapable, corrupt, but they are there. Australia, not much farther off, with richer treasures, with wider space, has no such privilege, and the wit of British statesmen, with the example of Republican America before them, seems inadequate to a task which elsewhere is found so easy. Sir, this cannot last. England herself has a deep interest in this question, and the sooner her statesmen begin to ponder the matter gravely, the better it will be for us all.

The thirty millions who inhabit the British Islands must make some provision for the two hundred and thirty millions who live beyond the narrow seas. They may rule the barbarous tribes who do not speak their language, or share their civilization, by the sword; but they can only rule or retain such Provinces as are to be found in North America by drawing their sympathies around a common centre—by giving them an interest in the army, the navy, the diplomacy, the administration and the legislation of the empire.

While a foreign war is impending, this may appear an inappropriate time to discuss these questions; but the time will come, and is near at hand, when they will command the earnest attention of every true British subject. We hear much, sir, every day, about the balance of power in Europe; and we all remember Canning's boast, that he was going to call a new world into existence to redress the balance of power in the old.

At this moment we are plunging into a foreign war—the fiercest and most bloody it will be that we have ever seen. What is the pretext on one side? Some question about the Greek religion. What is supposed to warrant our expensive armaments on the other? The balance of power in Europe. But is the balance of power in America nothing? and have these Provinces no weight in the scale? God forbid, sir, that at this moment a word of menace should escape my lips. I am incapable of such a meanness. England's hour of extremity should never be our opportunity for anything but words of cheer and the helping hand. But, sir, come peace or war, it is the interest of England that the truth be told her. Is the balance of power in America an unimportant consideration, and how is it to be preserved, except by preserving that half of the continent which still belongs to England? and that can only be done by elevating the inhabitants of these Provinces in their own opinion, and in that of the world at large. I know that it is fashionable in England to count upon the sympathies and cordial co-operation of the Republic. A year ago, Cobden and other apostles of his school, were preaching and relying upon universal peace. Now all Europe is arming. They preach day by day that Colonies are a burthen to the mother country. The reign of

peace, of universal brotherhood, may come. Should it not, and should Republican America throw herself into the contest against England, when engaged with other powers, as she did in 1812 ; what then would be England's position should the noble Provinces of North America have been flung away, for want of a little foresight and common sense ?

The power of the Republic would be broken if our half of the continent maintained its allegiance. But if that were thrown into the other scale, what then ? Fancy the stars and stripes floating over our six thousand vessels ; fancy five hundred thousand hardy North Americans with arms in their hands in a defiant attitude ; fancy half a continent with its noble harbors and five thousand miles of sea-coast, with all its fisheries and coal mines and timber gone. Fancy the dockyards and depots and arsenals of the enemy advanced 1,000 miles nearer to England. Oh ! sir, I have turned with disgust from the eternal gabble about the balance of power in Europe, when I have thought how lightly British statesmen seem to value the power that can alone balance their only commercial rival.

One subsidy to some petty European potentate has often cost more than all our railroads would have cost ; and yet they would have developed our resources in peace and formed our best security in time of war. A single war with half this continent added £120,000,000 to the national debt of England. What would a war with the whole of it cost ? And yet these Provinces are so lightly valued, that a loan for public improvements cannot be guaranteed or a single seat in the National Councils yielded, to preserve them. Sir, whatever others may think, I pause in the presence of the great peril which I foresee. I pray to God that it may be averted.

Here, sir, is work for the highest intellects—for the purest patriots, on both sides of the Atlantic. Here is a subject worthy of the consideration of the largest minded British statesmen now figuring on the stage of public life. In presence of this great theme, how our little squabbles sink into insignificance, as the witches' cauldron vanishes from the presence of Macbeth. How insignificant are many of the topics which they debate in the Imperial Parliament compared with this. I have seen night after night wasted while both Houses discussed the grave question whether or not a Jew should sit in the House of Commons ? a question that it would not take five minutes to decide in any Legislature from Canada to California. How often have I said to myself :—I wonder if it ever enters the heads of those noble Lords and erudite Commoners, who are so busy with this Jew that there are two millions and a half of Christians in British America who have no representation in either House? A little consideration given to that subject, I have thought, would not be a waste of time. When I have seen them quibbling with the great questions of a surplus population, mendicity and crime, I have asked myself:—Do these men know that there is, within the boundaries of the empire, within ten days' sail of England, employment for all ? freehold estates for all, with scarcely a provocative to crime ? I have often thought, sir, how powerful this empire might be made ; how prosperous in peace, how invincible in war, if the statesmen of England would set about its organization and draw to a common centre the high intellect which it contains.

With our maritime positions in all parts of the globe ; with every variety of soil and climate ; with the industrial capacity and physical resources of two hundred and sixty millions of people to rely on ; what might not this empire become if its intellectual resources were combined for its government and preservation ? If the whole population were united by common interests, no power on earth ever wielded means so vast, or influence so irresistible. But, sir, let the statesmen of England slumber and sleep over the field of enterprise which lies around them ; let them be deluded by economists who despise Colonists, or by fanatics who preach peace at any price with foreign despots ;

while no provision is made to draw around the throne the hearts of millions predisposed to loyalty and affection ; and the result we may surely calculate. Should the other half of this continent be lost for the want of forethought and sound knowledge, there will be trouble in the old homestead. "Shadows, clouds and darkness" will rest upon the abode of our fathers ; the free soil of England will not be long unprofaned ; and the gratitude of Turks and the friendship of Austrians or Republican Americans, will form but a poor substitute for the hearts and hands that have been flung away.

APPENDIX K.

COPY OF RECEIPT FOR PAYMENT OF ALABAMA CLAIM.

I give below a copy of a famous historical document which has a special interest for my Nova Scotia readers on account of its connection with Sir Edward Mortimer Archibald, a member of a distinguished Nova Scotian family (see *supra*, p. 21). Sir Edward was the fifth son of Judge S. G. W. Archibald, and after holding several important official positions for many years in Newfoundland he was appointed in 1857 British Consul at New York, and held this responsible office for twenty-two years, until he was obliged to retire at the age of 70 on a pension, in accordance with the rules of the consular service. He was made consul-general in 1871, a Companion of the Bath at the close of the civil war during which he gave constant evidence of his signal ability, and a Knight Commander of St. Michael and St. George on his retirement from office. The following facts will explain his connection with the payment of the Alabama award.

The accompanying certificate is a facsimile of that obtained from the Secretary of the Treasury of the United States upon the occasion of the payment in full of the fifteen million five hundred thousand dollars indemnity for the "Alabama" claims which the Geneve Conference of September 14, 1872, awarded to them on the part of Great Britain.

As will be seen by the endorsements thereon, the great banking firms of Drexel, Morgan & Co., Morton, Bliss & Co., and Jay Cooke & Co. made a contract with the British Government to pay this award on or before the 14th September, 1873.

Sir Edward Thornton, H. B. M.'s Minister at Washintgon and Consul-General Archibald of New York were appointed joint agents to pay over the indemnity.

During three months previous to this event Consul-General Archibald was constantly receiving instalments of the amount, in the form of numerous partial payments, which were deposited with the U. S. treasurer and for which coin certificates were issued. The whole transaction was one involving no small responsibility and actual work in accounting and correspondence with the U. S. Treasury, as in the whole of this important transaction, the Secretary of State, Mr. Hamilton Fish, absolutely declined to have anything whatever to do with the bankers employed by the British Government, and all communications were therefore made only through H. B. M.'s representative at Washington. When the amount was complete and the final deposit to be made, it was Consul-General Archibald who proceeded with it to Washington, and in the presence of Sir Edward Thornton, Secretary Fish and Assistant-Secretary Davis handed over the last amount to U. S. Treasurer Richardson, and received from his hands (after surrendering all previous certificates of deposit) the single one, covering the entire amount, of which this is a facsimile.

A leading New York paper, commenting upon the situation, says of the document that "the series of distinguished endorsements make it an historical document, which, when cancelled and filed away, will cause it to be much enquired after by curious visitors. The presence of the official representatives of the two greatest nations in the world—"made a picture for history"—and the article concludes by saying—"Everyone here looks upon the notable event as the last feature in the greatest victory of peace."

The original certificate of deposit was of course retained by the Secretary of the Treasury of the U. S. and has been framed and preserved among the archives of Government "as a memorial of the amicable settlement of the difference between the two countries without resort to arms." Each endorser of the receipt received a facsinmile of the original document, and the one I reproduce in this book was in the possession of Mrs. Charles Archibald, daughter of the Consul-General, until she gave me permission to copy it, and then hand it over to the public archives of Canada.

Act of March, 3d 1863
15.500.000
15.500.000
It is hereby certified that
Fifteen million five hundred thousand dollars.
No. 1.
Have been deposited with the Treasurer of the United States
No. 1.
Payable in
GOLD
At his Office
To DREXEL, MORGAN & Co. MORTON, BLISS & Co. JAY COOKE & Co. or their order.
Washington, September, 9th 1873.
John Allison
Register of the Treasury
Approved, William A. Richardson
Secretary of the Treasury.
Treasurer of the United States

Pay to the Joint order of H. B. M. Minister or Charge d' Affaires at Washington and Acting Consul General at New York.—

Jno Morgan J C E
Morton Bliss & Co—
Ay Cooler C

Pay to the Order of Hamilton Fish Secretary of State

Edwd Thornton
H. B. Mis Minister

Ew Archibald
H. B. M. Consul General
New York

Pay to the order of Hon. Wm A Richardson Secretary of the Treasury

Hamilton Fish
Secretary of State—

II. *Hochelagans and Mohawks; A Link in Iroquois History.*

By W. D. LIGHTHALL, M.A., F.R.S.L.

(Presented by John Reade and read May 26, 1899.)

The exact origin and first history of the race whose energy so stunted the growth of early Canada and made the cause of France in America impossible, have long been wrapped in mystery. In the days of the first white settlements the Iroquois are found leagued as the Five Nations in their familiar territory from the Mohawk River westward. Whence they came thither has always been a disputed question. The early Jesuits agreed that they were an off-shoot of the Huron race whose strongholds were thickly sown on the eastern shore of Lake Huron, but the Jesuits were not clear as to their course of migration from that region, it being merely remarked that they had once possessed some settlements on the St. Lawrence below Montreal, with the apparent inference that they had arrived at these by way of Lake Champlain. Later writers have drawn the same inference from the mention made to Cartier by the Hochelagans of certain enemies from the south whose name and direction had a likeness to later Iroquois conditions. Charlevoix was persuaded by persons who he considered had sufficiently studied the subject that their seats before they left for the country of the Five Nations were about Montreal. The late Horatio Hale[1] put the more recently current and widely accepted form of this view as follows: "The clear and positive traditions of all the surviving tribes, Hurons, Iroquois and Tuscaroras, point to the Lower St. Lawrence as the earliest known abode of their stock. Here the first explorer, Cartier, found Indians of this stock at Hochelaga and Stadacona, now the sites of Montreal and Quebec. Centuries before his time, according to the native tradition, the ancestors of the Huron-Iroquois family had dwelt in this locality, or still further east and nearer to the river's mouth. As the numbers increased, dissensions arose. The hive swarmed and band after band moved off to the west and south."

"Their first station on the south side of the lakes was at the mouth of the Oswego River.[2] Advancing to the southeast, the emigrants struck the River Hudson" and thence the ocean. "Most of them returned to the Mohawk River, where the Huron speech was altered to Mohawk. In Iroquois tradition and in the constitution of their League the Canienga (Mohawk) nation ranks as 'eldest brother' of the family. A comparison of the dialects proves this tradition to be well founded. The Canienga language approaches nearest to the Huron, and is undoubtedly the

[1] "Iroquois Book of Rites," p. 10.
[2] *Ibid.*, p. 13.

source from which all the other Iroquois dialects are derived. Cusick states positively that the other families, as he styles them, of the Iroquois household, leaving the Mohawks in their original abode, proceeded step by step to the westward. The Oneidas halted at their creek, the Onondagas at their mountain, the Cayugas at their lake and the Senecas or Sonontowans, the great hill people, at a lofty eminence which rises south of the Canandaigua Lake." Hale appeals also to the Wyandot tradition recorded by Peter Dooyentate Clark, that the Hurons originally lived about Montreal near the "Senecas," until war broke out and drove them westward. He sets the formation of the League of the Long House as far back as the fourteenth century.

All these authors, it will be seen, together with every historian who has referred to the League,—treat of the Five Nations *as always having been one people.* A very different view, based principally on archæology, has however been recently accepted by at least several of the leading authorities on the subject,—the view that the Iroquois League was a *compound of two distinct peoples*, the Mohawks, in the east, including the Oneidas; and the Senecas, in the west, including the Onondagas and Cayugas. Rev. W. M. Beauchamp, of Baldwinsville, the most thorough living student of the matter, first suggested a late date for the coming of the Mohawks and formation of the League. He had noticed that the three Seneca dialects differed very greatly from the two Mohawk, and that while the local relics of the former showed they had been long settled in their country, those of the latter evidenced a very recent occupation. He had several battles with Hale on the subject, the latter arguing chiefly from tradition and change of language. "The probability," writes Mr. Beauchamp—privately to the writer—"is that a division took place at Lake Erie, or perhaps further west; some passed on the north side and became the Neutrals and Hurons, *the vanguard becoming the Mohawks or Hochelagans, afterwards Mohawks and Oneidas.* Part went far south, as the Tuscaroras and Cherokees, and a more northern branch, the Andastes; part followed the south shore and became the Eriés, Senecas and Cayugas; part went to the east of Lake Ontario, removing and becoming the Onondagas, when the Huron war began."

It is noticeable that the earliest accounts of the Five Nations speak of them as of two kinds—Mohawks and "Sinnekes," or as termed by the French the Inferior and Superior Iroquois. For example Antony Van Corlear's *Journal*, edited by Gen. James Grant Wilson, also certain of the New York documents. The most thorough local student of early Mohawk town-sites, Mr. S. L. Frey, of Palatine Bridge, N.Y., supports Mr. Beauchamp in his view of the late coming of the Mohawks into the Mohawk River Valley, where they have always been settled in historic times. According to him, although these people changed their sites every 25 or 30 years from failure of the wood supply and other causes,

only four prehistoric sites have been discovered in that district, all the others containing relics of European origin. Mr. Beauchamp believes even this number too large. Both put forward the idea that the Mohawks were the ancient race of Hochelaga, whose town on the island of Montreal was visited by Jacques Cartier in 1535, and had disappeared completely in 1608 when Champlain founded Quebec. "What had become of these people?" writes Mr. Frey, in his pamphlet "The Mohawks." "An overwhelming force of wandering Algonquins had destroyed their towns. To what new land had they gone? I think we shall find them seated in the impregnable strongholds among the hills and in the dense forests of the Mohawk Valley."

It is my privilege to take up their theory from the Montreal end and in the light of the local archæology of this place and of early French historical lore, to supply links which seem to throw considerable light on the problem.

The description given by Cartier of the picturesque palisaded town of Hochelaga, situated near the foot of Mount Royal, surrounded by cornfields, has frequently been quoted. But other points of Cartier's narrative, concerning the numbers and relations of the population, have scarcely been studied. Let us examine this phase of it. During his first voyage in 1534, in the neighbourhood of Gaspé, he met on the water the first people speaking the tongue of this race, a temporary fishing community of over 200 souls, men, women and children, in some 40 canoes, under which they slept, having evidently no village there, but belonging, as afterwards is stated, to Stadacona. He seized and carried to France two of them, who, when he returned next year, called the place where they had been taken *Honguédo*, and said that the north shore, above Anticosti Island, was the commencement of inhabited country which led to *Canada* (the Quebec region), Hochelaga, (Montreal) and the country of *Saguenay*, far to the west "whence came the red copper" (of which axes have since been found in the débris of Hochelaga, and which, in fact, came from Lake Superior), and that no man they ever heard of had ever been to the end of the great river of fresh water above. Here we have the first indication of the racial situation of the Hochelagans. At the mouth of the Saguenay River—so called because it was one of the routes to the Saguenay of the Algonquins, west of the Upper Ottawa—he found four fishing canoes from Canada. Plenty of fishing was prosecuted from this point upwards. In "the Province of Canada," he proceeds, "there are several peoples in unwalled villages." At the Isle of Orleans, just below Quebec, the principal peace chief, or, Agouhanna of "Canada," Donnaconna, came to them with 12 canoes from the town (ville) of Stadacona, or Stadaconé, which was surrounded by tilled land on the heights. Twenty-five canoes from Stadacona afterwards visited them; and later Donnaconna brought on board "10 or 12 other of the greatest

chiefs" with more than 500 persons, men, women and children, some doubtless from the neighbouring settlements. If the same 200 persons as in the previous year were absent fishing at Gaspé, and others in other spots, these figures argue a considerable population.

Below Stadacona, were four "peoples and settlements": *Ajoasté*, *Starnatam*, *Tailla* (on a mountain) and *Satadin* or *Stadin*. Above *Stadacona* were *Tekenouday* (on a mountain) and *Hochelay* (*Achelacy* or *Hagouchouda*)[1] which was in open country. Further up were *Hochelaga* and some settlements on the island of Montreal, and various other places unobserved by Cartier, belonging to the same race; who according to a later statement of the remnant of them, confirmed by archæology, had several "towns" on the island of Montreal and inhabited "*all the hills to the south and east.*"[2] The hills to be seen from Mount Royal to the south are the northern slopes of the Adirondacks; while to the east are the lone volcanic eminences in the plain, Montarville, Belœil, Rougemont, Johnson, Yamaska, Shefford, Orford and the Green Mountains. All these hills deserve search for Huron-Iroquois town-sites. The general sense of this paragraph includes an implication also of settlements towards and on Lake Champlain, that is to say, when taken in connection with the landscape. (My own dwelling overlooks this landscape.) At the same time let me say that perhaps due inquiries might locate some of the sites of Ajoaste and the other villages in the Quebec district. In Cartier's third voyage he refers obscurely, in treating of Montreal, to "the said town of *Tutonaguy*." This word, with French pronunciation, appears to be the same as that still given by Mohawks to the Island,—*Tiotiaké*, meaning "deep water beside shallow," that is to say, "below the Rapid." In the so-called Cabot map of 1544 the name Hochelaga is replaced by "*Tutonaer*," apparently from some map of Cartier's. It may be a reproduction of some lost map of his. Lewis H. Morgan gives "Tiotiake" as "Do de-a-ga." Another place named by Cartier is *Maisouna*, to which the chief of Hochelay had been gone two days when the explorer made his settlement a visit. On a map of Ortelius of 1556 quoted by Parkman this name appears to be given as Muscova, a district placed on the right bank of the Richelieu River and opposite Hochelay, but possibly this is a pure guess, though it is a likely one. It may perhaps be conjectured that Stadacona, Tailla and Tekenouday, being on heights, were the oldest strongholds in their region.

All the country was covered with forests "except around the peoples, who cut it down to make their settlement and tillage." At Stadacona

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[1] The latter I conjecture not to be the real name of the place but that the Stadacona people had referred to Hochelay as "Agojûda" or wicked. The chief of Hochelay on one occasion warned Cartier of plots at Stadacona, and there appears to have been some antagonism between the places. The Hochelay people seem to have been Hochelagans proper not Stadacona Hochelagans. Hochelay-aga could mean "people of Hochelay."

[2] Relation of 1642.

he was shown five scalps of a race called *Toudamans* from the south, with whom they were constantly at war, and who had killed about 200 of their people at Massacre Island, Bic, in a cave, while they were on the way to Honguédo to fish. All these names must of course be given the old French pronunciation.

Proceeding up the river near Hochelaga he found "a great number of dwellings along the shore" inhabited by fisherfolk, as was the custom of the Huron-Iroquois in the summer season. The village called Hochelay was situated about forty-five miles above Stadacona, at the Richelieu rapid, between which and Hochelaga, a distance of about 135 miles, he mentions no village. This absence of settlements I attribute to the fact that the intermediate Three-Rivers region was an ancient special appurtenance of the Algonquins, with whom the Hochelagans were to all appearance then on terms of friendly sufferance and trade, if not alliance. In later days the same region was uninhabited, on account of Iroquois incursions by the River Richelieu and Lake Champlain. In the islands at the head of Lake St. Peter, Cartier met five hunters who directed him to Hochelaga. "More than a thousand" persons, he says, received them with joy at Hochelaga. This expression of number however is not very definite. It is frequently used by Dante to signify a multitude in the *Divina Comédia*. The town of Hochelaga consisted of "about fifty houses, in length about fifty paces each at most, and twelve or fifteen paces wide," made of bark on sapling frames in the manner of the Iroquois long houses. The round "fifties" are obviously approximate. The plan of the town given in Ramusio shows some forty-five fires, each serving some five families, but the interior division differs so greatly from that of early Huron and Iroquois houses, and from his phrase "fifty by twelve or fifteen," that it appears to be the result of inaccurate drawing. There is therefore considerable room for difference as to the population of the town, ranging from say 1,200 to 2,000 souls, the verbal description which is much the more authoritative, inclining in favour of the latter. Any estimate of the total population of the Hochelagan race on the river, must be a guess. If, however, those on the island of Montreal be set at 2,000, and the "more than 500" of Stadacona be considered as a fair average for the principal town and 300 (which also was the average estimated by Père Lalemant for the Neutral nation) as an average for the eight or so villages of the Quebec district, (the absentees, such as the 200 at Gaspé from Stadacona being perhaps offset by contingents from the places close to Stadacona) we have some 4,900 accounted for. Those on all the hills to the south and east of Mount Royal would add anywhere from say 3,000 to an indefinitely greater number more. Perhaps 5,000, however, should not be exceeded as the limit for these hills and Lake Champlain. We arrive therefore at a guess of from 7,900 to 9,900 as the total. As the lower figures seem conservative, compared with the

early average of Huron and Iroquois villages, the guess may perhaps be raised a little to say from 10,000 to 11,000. "This people confines itself to tillage and fishing, for they do not leave their country and are not migratory like those of Canada and Saguenay, although the said Canadians are subject to them, *with eight or nine other peoples who are on the said river.*" Nevertheless the site of Hochelaga, unearthed in 1860, shows them to have been *traders* to some extent with the west, evidently through the Ottawa Algonquins. What Cartier did during his brief visit to the town itself is well known. The main point for us is that three men led him to the top of Mount Royal and showed him the country. They told him of the Ottawa River and of three great rapids in the St. Lawrence, after passing which, "one could sail more than three moons along the said river," doubtless meaning along the Great Lakes. Silver and brass they identified as coming from that region, and "there were Agojudas, or wicked people, armed even to the fingers," of whom they showed "the make of their armor, which is of cords and wood laced and woven together; giving to understand that the said Agojudas are continually at war with one and other." This testimony clearly describes the armour of the early Hurons and Iroquois[1] as found by Champlain, and seems to relate to war between the Hurons and Senecas at that period and to an aversion to them by the people of the town of Hochelaga themselves; who were, however, living in security from them at the time, apparently cut off from regular communication with them by Algonquin peoples, particularly those of the Ottawa, who controlled Huron communication with the lower St. Lawrence in the same way in Champlain's days.

On returning to Stadacona, Cartier, by talking with Donnaconna, learnt what showed this land of Saguenay so much talked of by these people, to be undoubtedly the Huron country. "The straight and good and safest road to it is by the *Fleuve* (St. Lawrence) to above Hochelaga and by the river which descends from the said Saguenay and enters the said Fleuve (as we had seen); and thence it takes a month to reach." This is simply the Ottawa route to Lake Huron used by the Jesuits in the next century. What they had seen was the Ottawa River entering the St. Lawrence—from the top of Mount Royal, whence it is visible today. The name Saguenay may possibly be *Saginaw*,—the old *Saguenam*, the "very deep bay on the west shore of Lake Huron," of Charlevoix, (Book XI.) though it is not necessarily Saginaw Bay itself, as such names shift. And they gave to understand that in that country the people are clothed with clothes like us, and *there are many peoples in towns* and *good persons* and that they have a great quantity of gold and of *red copper*. And they told us that *all the land from the said first river to Hochelaga*

[1] Similar armour, though highly elaborated, is to be seen in the suits of Japanese warriors, made of cords and lacquered wood woven together.

and Saguenay is an island surrounded by streams and the said great river (St. Lawrence); and that after passing Saguenay, said river (Ottawa) enters *two or three great lakes of water, very large; after which* a *fresh water sea is reached*, whereof there is no mention of having seen the end, *as they have heard from those of the Saguenay; for they told us they had never been there themselves.*" Yet later, in chapter XIX., it is stated that old Donnaconna assured them he had been in the land of the Saguenay, where he related several impossible marvels, such as people of only one leg. It is to be noted that "the peoples in towns," who are apparently Huron-Iroquois, are here referred to as "good people," while the Hochelagans speak of them as "wicked." This is explicable enough as a difference of view on distant races with whom they had no contact. It seems to imply that the "Canada" people were not in such close communication with the town of Hochelaga as to have the same opinions and perhaps the Canada view of the Hurons as good persons was the original view of the early settlers, while the Hochelagans may have had unpleasant later experiences or echo those of the Ottawa Algonquins. But furthermore they told him of the Richelieu River where apparently it took a month to go with their canoes from Sainte Croix (Stadacona) to a country "where there are never ice nor snow; but where there are constant wars one against another, and there are oranges, almonds, nuts, plums, and other kinds of fruit in great abundance, and oil is made from trees, very good for the cure of diseases; there the inhabitants are clothed and accoutred in skins like themselves." This land Cartier considered to be Florida,—but the point for our present purpose is the frequenting of the Richelieu, Lake Champlain and lands far south of them by the Hochelagans at that period. At the beginning of the seventeenth century Capt. John Smith met the canoes of an Iroquois people on the upper part of Chesapeake Bay.

We may now draw some conclusions. Originally the population of the St. Lawrence valley seems to have been occupied by Algonquins, as these people surrounded it on all sides. A question I would like to see investigated is whether any of these built villages and grew corn here, as did some of the Algonquins of the New England coast and those of Allumette Island on the Ottawa. This might explain some of the deserted Indian clearings which the early Jesuits noted along the shore of the river, and of which Champlain, in 1611, used one of about 60 acres at Place Royale, Montreal. Cartier, it is seen, expressly explains some of them to be Huron-Iroquois clearings cultivated under his own observation. The known Algonquins of the immediate region were all nomadic.

In 1534 we have, from below Stadacona (Quebec) to above Hochelaga (Montreal), and down the Richelieu River to Lake Champlain, the valley in possession of a Huron-Iroquois race, dominated by

Hochelaga, a town of say 2,000 souls, judging from the Huron average and from Cartier's details. The descendants of the Hochelagans in 1642 pointed out the spots where there were "several towns" on the island. Mr. Beauchamp holds, with Parkman, Dawson and other writers, that "those who pointed out spots in 1642 were of an *Algonquin* tribe, not descendants of the Mohawk Hochelagans, but locally their successors." But I cannot accept this Algonquin theory, as their connection with the Hochelagans is too explicit and I shall give other reasons further on. The savages, it is true, called the island by an Algonquin name; "the island where there was a city or village,"[1] the Algonquin

SHALLOW GRAVE IN PREHISTORIC BURYING-GROUND AT WESTMOUNT ON MOUNT ROYAL SHOWING ATTITUDE OF SEPULTURE.

phrase for which was Minitik-Outen-Entagougiban, but these later terms have small bearing. The site of one of the towns on the island is conjectured, from the finding of relics, to have been at Longue Pointe, nine miles below Hochelaga; a village appears from Cartier's account of his third voyage to have existed about the Lachine Rapids; and another was some miles below, probably at Point St. Charles or the Little River at Verdun. Fourteen skeletons, buried after the Mohawk fashion, have been discovered on the upper slope of Westmount, the southern ridge of Mount Royal, about a mile from Hochelaga, and not far from an old Indian well, indicating possibly the proximity of another pre-historic town-site of the race, and at any rate a burying ground. The identification and

[1] Relation of 1642, p. 36.

excavations were made by the writer. If, however, the southern enemies, called Toudamans, five of whose scalps were shown Cartier at Stadacona, were, as one conjecture has it, Tonontouans or Senecas, the Iroquois identity theory must be varied, but it is much more likely the Toudamans were the Etchemins. At any rate it seems clear that the Hochelagan race came down the St. Lawrence as a spur (probably an adventurous fishing party) from the great Huron-Iroquois centre about Lake Huron[1]; for that their advent had been recent appears from the fewness of sites discovered, from the smallness of the population, considering the richness of the country, and especially from the fact that the Huron, and the Seneca, and their own, tongues were still mutually comprehensible, notwithstanding the rapid changes of Indian dialects. Everything considered, their coming might perhaps be placed about 1450, which could give time for the settlements on Lake Champlain, unearthed by Dr. D. S. Kellogg and others and rendered probable by their pottery and other evidence as being Huron-Iroquois.[2] Cartier, as we have seen, described the Hochelagan towns along the river.

The likeness of the names Tekenouday and Ajoasté to that of the Huron town Tekenonkiaye, and the Andastean Andoasté, shows how close was the relationship. Nevertheless the Hochelagans were quite cut off from the Hurons, whose country as we have found, some of them point to and describe to Cartier as inhabited by evil men. As the Stadacona people, more distant, independently refer to them as good, no war could have been then proceeding with them.

In 1540 when Roberval came—and down to 1543—the conditions were still unchanged. What of the events between this date and the coming of Champlain in 1605? This period can be filled up to some extent.

About 1560 the Hurons came down, conquered the Hochelagans and their subject peoples and destroyed Hochelaga. I reach this date as

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[1] Two of the Huron nations settled in Canada West about 1400; another about 1590; the fourth in 1610. See Relations,—W. M. Beauchamp.

[2] Dr. Kellogg, whose collection is very large and his studies valuable, writes me as follows: "In 1886 Mr. Frey sent me a little box of Indian pottery from his vicinity (the Mohawk Valley). It contained chiefly edge pieces of jars, whose ornamentation outside near the top was in *lines*, and nearly every one of these pieces also had the *deep finger nail indentation*. I spread these out on a board. Many had also the small circle ornamentation, made perhaps by the end of a hollow bone This pottery I have always called Iroquois. At two sites near Plattsburg this type prevails. But otherwise whenever we have found this type we have looked on it curiously. It is *not* the type prevailing here. The type here has ornamentations consisting of dots and dotted lines, dots in lines, scallop stamps, etc. These dots on a single jar are hundreds and perhaps thousands in number. Even in Vermont the Iroquois type is abundant. This confirms what Champlain's Indian friends told him about the country around the mountains in the east (i. e. in Vermont) being occupied by their enemies. . . . The pottery here indicates a much closer relation with that at Hochelaga than with that at Palatine Bridge (Mohawk Valley, N.Y.)

follows: In 1646 (Relation of 1646, p. 34) Père Lalemant reports that "under the Algonquin name" the French included "a diversity of small peoples," one of which was named the Onontchataronons or "the tribe of Iroquet," "whose ancestors formerly inhabited the island of Montreal," and one of their old men "aged say eighty years" said "my mother told me that in her youth *the Hurons* drove us from this island." (1646, p. 40.) This makes it clear that the inroad was *Huron*. Note that this man of eighty years does not mention having *himself* lived on the island; and also the addition "*in her youth*." This fact brings us back to before 1566. But in 1642, another "old man" states that his "grandfathers" had lived there. Note that he does not say his parents nor himself. These two statements, I think, reasoning from the average ages of old men, carry us back to about 1550-60. Champlain, in 1622, notes a remark of two Iroquois that the war with the Hurons was then "more than fifty years" old. The Huron inroad could not likely have occurred for several years after 1542, for so serious an incursion would have taken some years to grow to such a point out of profound peace. 1550 would therefore appear a little early. The facts demonstrate incidentally a period of prosperity and dominance on the part of the Hurons themselves, for instead of a mere incursion, it exhibits, even if made by invitation of the Algonquins, a permanent breaking through of the barriers between the Huron country and the Montreal neighbourhood, and a continuance of their power long enough and sufficiently to press forward against the enemy even into Lake Champlain. It also shows that the Superior Iroquois were not then strong enough to confine them. Before the League, the latter were only weak single tribes. When Dutch firearms were added to the advantage of the league, the Hurons finally fell from their power, which was therefore apparently at its height about 1560.

Charlevoix, *Histoire de la Nouvelle France*, end of Bk. V., after describing the first mass at Ville Marie, in 1642, says: "The evening of the same day M. de Maisonneuve desired to visit the Mountain which gave the island its name, and two old Indians who accompanied him thither, having led him to the top, told him they were of the tribe who had formerly inhabited this country." "We were," they added, "*very numerous* and all the hills (*collines*) which you see to the south and east, were peopled. The Hurons drove thence our ancestors, of whom a part took refuge among the Abénakis, *others withdrew into the Iroquois cantons*, a few remained with our conquerors." They promised Maisonneuve to do all they could to bring back their people, "but apparently could not succeed in reassembling the fragments of this dispersed tribe, which doubtless is that of the Iroquois of which I have spoken in my *Journal*."

A proof that this people of Iroquet were not originally Algonquins is that by their own testimony they had cultivated the ground,

One of them actually took up a handful of the soil and called attention to its goodness; and they also directly connected themselves in a positive manner with the Hochelagans by the dates and circumstances indicated in their remarks as above interpreted. The use of the term "Algonquin" concerning them is very ambiguous and as they were merged among Algonquin tribes they were no doubt accustomed to use that language. Their Huron-Iroquois name, the fact that they were put forward to interpret to the Iroquois in Champlain's first excursion; and that a portion of them had joined the Iroquois, another portion the Hurons, and the rest remained a little band by themselves, seem to add convincingly to the proof that they were not true Algonquins. Their two names "Onontchataronons" and "Iroquet" are Iroquois. The ending "Onons" (Onwe) means "men" and is not properly part of the name. Charlevoix thought them Hurons, from their name. They were a very small band and, while mentioned several times in the Jesuit Relations, had disappeared by the end of the seventeenth century from active history. It was doubtless impossible for a remnant so placed to maintain themselves against the great Iroquois war parties.

A minor question to suggest itself is whether there is any connection between the names "Iroquet" and "Iroquois". Were they originally forms of the same word? Or were they two related names of divisions of a people? Certainly two closely related peoples have these closely similar names. They were as clearly used as names of distinct tribes however, in the seventeenth century. The derivation of "Iroquois" given by Charlevoix from "hiro"—"I have spoken" does not seem at all likely; but the analogy of the first syllables of the names Er-ié, Hur-ons, Hir-oquois, Ir-oquet and Cherokee may have something in it.

The Iroquets or Hochelagans attributed their great disaster,—the destruction of their towns and dispossession of their island,—to the Hurons, but Charlevoix[1] records an Algonquin victory over them which seems to have preceded, and contributed to, that event, though the lateness of Charlevoix renders the story not so reliable in detail as the personal recollections of the Iroquets above given: His story[2] given "on the authority of those most versed in the old history of the country", proceeds as follows: "Some Algonquins were at war with the Onontcharonnons better known under the name of Tribe of Iroquet, and whose former residence was, it is said, in the Island of Montreal. The name they bear proclaims, they were of Huron speech; nevertheless it is claimed that it was the Hurons who drove them from their ancient country, and who in part destroyed them. However that may be, they were at the time I speak of, at war with the Algonquins, who, to finish this war at one stroke, thought of a stratagem, which succeeded". This stratagem was an

[1] Journal, Vol. I., pp. 162-4.

[2] Journal Historique d'un Voyage à L'Am., Lettre VI.

ambush placed on both sides of the River Bécancour near Three Rivers, with some pretended fishermen out in canoes as decoys. The Iroquets attacked and pursued the fishermen, but in the moment of victory, a hail of arrows issued from the bushes along both shores. Their canoes being pierced, and the majority wounded, they all perished. "The tribe of Iroquet never recovered from this disaster; and none to day remain. The quantity of corpses in the water and on the banks of the river so infected it, that it retains the name of Rivière Puante"; (Stinking River).

Charlevoix[1] gives, as well supported, the story of the origin of the war between the Iroquois and Algonquins. "The Iroquois had made with them a sort of alliance very useful to both." They gave grain for game and armed aid, and thus both lived long on good terms. At last a disagreement rose in a joint party of 12 young hunters, on account of the Iroquois succeeding while the Algonquins failed in the chase. The Algonquins, therefore, maliciously tomahawked the Iroquois in their sleep. Thence arose the war.

In 1608, according to Ferland[2] based evidently upon the statement of Champlain, the remnant of the Hochelagans left in Canada occupied the triangle above Montreal now bounded by Vaudreuil, Kingston and Ottawa. This perhaps indicates it as the upper part of their former territory. Sanson's map places them at about the same part of the Ottawa in the middle of the seventeenth century and identifies them with La Petite Nation, giving them as "Onontcharonons ou La Petite Nation". That remnant accompanied Champlain against the Iroquois, being of course under the influence of their masters the Hurons and Algonquins. Doubtless their blood is presently represented among the Huron and Algonquin mission Indians of Oka, Lorette, Petite Nation, etc., and perhaps among those of Caughnawaga and to some extent, greater or less, among the Six Nations proper.

From the foregoing outline of their history, it does not appear as if the Hochelagans were exactly the Mohawks proper. It seems more likely that by 1560, settlements, at first mere fishing-parties, then fishing-villages, and later more developed strongholds with agriculture, had already been made on Lake Champlain by independent offshoots of the Hochelagan communities, of perhaps some generations standing, and not unlikely by arrangement with the Algonquins of the Lake similar to the understanding on the river St. Lawrence, as peace and travel appear to have existed there. The bonds of confederacy between village and village were always shifting and loose among these races until the Great League. To their Lake Champlain cousins the Hochelagans would naturally fly for refuge in the day of defeat, for there was no other direction suitable for their retreat. The Hurons and Algonquins carried on the war against the

[1] Journal, end of Letter XII.
[2] Hist. du Canada, Vol. I., p. 92.

fused peoples, down into Lake Champlain. When, after more than fifty years of the struggle, Champlain goes down to that Lake in 1609, he finds there the clearings from which they have been driven, and marks their cabins on his map of the southeast shore. This testimony is confirmed by that of archæology showing their movement at the same period into the Mohawk Valley. Doubtless their grandchildren among the Iroquois, like their grandchildren among the Algonquins, remembered perfectly well the fact of their Huron and Algonquin wrongs, and led many a war party back to scenes known to them through tradition, and which it was their ambition to recover. It seems then to be the fact that the Mohawks proper, or some of their villages, while perhaps not exactly Hochelagans, were part of the kindred peoples recently sprung from and dominated by them and were driven out at the same time. The two peoples—Mohawks and Iroquets—had no great time before, if not at the time of Cartier's arrival—been one race living together in the St. Lawrence valley: In the territory just west of the Mohawk valley, they found the "Senecas" as the Onondagas, Cayugas and Senecas together were at first called, and soon, through the genius of the Mohawk Hiawatha, they formed with them the famous League, in the face of the common enemy. By that time the Oneidas had become separated from the Mohawks. These indications place the date of the League very near 1600. The studies of Dr. Kellogg of Plattsburgh on the New York side of Lake Champlain and of others on the Vermont shore, who have discovered several Mohawk sites on that side of the lake may be expected to supply a link of much interest on the whole question, from the comparison of pottery and pipes. On the whole the Hochelagan facts throw much light both forward on the history of the Iroquois and backwards on that of the Huron stock. Interpreted as above, they afford a meagre but connected story through a period hitherto lost in darkness, and perhaps a ray by which further links may still be discovered through continued archæological investigation.

NOTE. Like the numbers of the Hochelagan race, the question how long they had been in the St. Lawrence valley must be problematical. Sir William Dawson describes the site of Hochelaga as indicating a residence of several generations. Their own statements regarding the Huron country—that they "had never been there", and that they gathered their knowledge of it from the Ottawa Algonquins, permits some deductions. If the Hochelagans—including their old men—had never been westward among their kindred, it is plain that the migration must have taken place more than the period of an old man's life previous—that is to say more than say eighty years. If to this we add that the old men appear not even to have derived such knowledge as they possessed from their parents but from strangers, then the average full life of aged parents should be added, or say sixty years more, making a total of at least one hundred and forty years since the immigration. Something might, it is true, be allowed for a sojourn at intermediate points: and the scantiness of the remarks is also to be remembered. But there remains to account for the considerable population which had grown up in the land from apparently one centre. If the original intruders were four hundred, for example, then in doubling every twenty years, they would number 12,800 in a century. But this rate is higher than their state of "Middle Barbarism" is likely to have permitted and a hundred and fifty years would seem to be as fast as they could be expected to attain the population they possessed in Cartier's time.

MAP NO. 12.—MAP OF NEW BRUNSWICK IN THE PREHISTORIC (INDIAN) PERIOD.
Indian routes of travel are shown in red.

III.—*A Monograph of Historic Sites in the Province of New Brunswick.*

(Contributions to the History of New Brunswick, No. 4.)

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(Presented by Sir John Bourinot, and read May 25, 1899.)

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INTRODUCTION.

Of the different phases of the study of History, the one that appeals to the most men is the archæological. Especially is this true for local history, in which a dozen persons may be found giving attention to situations of local events, genealogy, etc., to one who cares for the untangling of threads of cause and effect in the evolution of events or institutions. No doubt this preference is due primarily to the fact that the former appeals most to the imagination, which nearly all men like to exercise, while the latter demands work of the understanding which fewer care for. Events in which one can picture himself taking part, particularly those in which heroism, endurance and loyalty are demanded, are the ones that men like most to read about and to think upon, and the

vividness and pleasure are so much the greater when one can stand upon the exact spot where the events occurred and feel himself surrounded by the very witnesses, inanimate though they be, of these events. This feeling has been finely expressed by Crawford when he says:—"We have an involuntary reverence for all witnesses of History, be they animate or inanimate, men, animals or stones." Perhaps, after all, this feeling may be but a phase of our still active though unconscious animism, a relic of the feeling which in primitive races peoples all great objects with conscious spirits.

It has always seemed to me that even our greater writers of history have not, as a rule, taken sufficient account of this feeling in the majority of their readers. In their treatment of local events they are often excusably inaccurate, or even inexcusably careless, but they lose thereby a great opportunity to increase their audience and influence. Men are prone to judge the whole by the part they themselves know, and if a reader discovers that the subjects he knows and likes best are badly treated, he is likely to suspect other parts, and even to condemn the whole work. There is, however, great excuse for neglect of local archæology by historians of wide interests, for it is a subject requiring minute and especially personal investigation, and this of course they have not time to give. Local archæology must, in order to be well done, form a subject for investigation by itself, and, in order to inspire confidence, must be worked out in the fullest, most comprehensive and most scientific manner. When this is done, the general historian may accept its results with confidence, and make his work locally accurate and complete. A comprehensive monographic study of the subject is likely also to develop new facts, and especially new connections of cause and effect, and new generalizations. Moreover, the work should be done before the events are too long past, and their sites have had time to be obscured by forgetfulness, misplaced by the vagaries of tradition, or hidden by topographical or other changes. This kind of work is not, I admit, as high a grade of historical study as the investigation of the origin of institutions, which seems to be the highest aim of history, but it supplies details for history and materials for making it more real and attractive. It is for history much what dictionaries are for literature.

These observations sufficiently explain the objects of the present work, which are, in brief, the locating of events of New Brunswick history for the use of the many whom it does and will in the future interest, the supplying of accurate and complete local archæological data for the use of the general historian whose work may deal with or touch upon New Brunswick, the recovery of facts as to earlier events before their location is for ever lost, and an attempt to discover, from the grouping of the known facts, new ones and new principles. My ideal has been to describe every place of any importance to our local history so exactly that the

interested reader may, with these descriptions and maps in hand, locate on a modern map, or go in person to, the exact spot.

Unlike some other phases of history, archæological studies such as the present should be undertaken as soon as possible after the events have occurred, for their evidence is found not so much in documents reasonably sure of long preservation, but in perishable materials and alterable localities. While these sites are still determinable, therefore, they should be fixed for the future, partly by accurate maps showing their relation to neighbouring objects less liable to change, and partly by monuments or other memorials of lasting materials. This placing of tablets or stones, suitably inscribed, to mark historical sites yet well known but liable to be lost in the future, seems a most appropriate work for local historical societies. This excellent custom has been carried to a very gratifying degree in Massachusetts and other parts of New England, but as yet we have done nothing to mark our important sites in New Brunswick.

The principles of the investigation of such a subject as the present are extremely simple. First of all, one must guard against preconceived opinions and a desire, based on local pride, to magnify the importance of some particular locality. Then he must supply himself with all known documentary and cartographical evidence, and visit the locality, calling to aid all local tradition, and especially minutely examining the ground, excavating if necessary. Nothing in such a study as this can replace the actual visit to the locality and its leisurely inspection. Even a single glance at the spot and its surroundings will often settle questions that inspection of maps alone leaves doubtful. If actual remains are visible, undoubtedly those of the fort or other object sought, the student is indeed fortunate, and his search ends. But if no such traces are visible, one turns to tradition, which, for very recent events, especially those within the memory of men now living or of their fathers, may be of much value, but which for more distant events rapidly lessens in value; while for events of several generations ago, particularly if the vicinity has not been continuously occupied, tradition is well-nigh valueless, or even worse than that, actually misleading. Tradition dearly loves a sensation, and manufactures it from a small basis. It loves, too, an explanation of things that are odd, and is much influenced by coincidences, so that it tends to link any odd place or object with some past striking event, and, once fixed, is so satisfied with itself that it is beyond the reach of reason. The psychology of tradition would form a curious subject for investigation. The seeker for local sites must use tradition rather for hints than as evidence. When tradition fails him, he can only fall back upon probabilities based on the nature of the locality and of the event that happened there, in which he will be greatly aided by a full knowledge of the customs of the time. Forts are not built in marshes when there is high land near, nor do early settlers seat themselves on

rocky lands when there are fertile intervales near by. But this argument from probability must also be used with caution, for there are many imaginable causes, personal, political or other, which may, at that period, have outweighed the influences which would determine us at the present time. If probability of this kind fails, then one has to take documents or old maps alone, and do the best they allow. But these sources of evidence are by no means perfect, for aside from the fact that they do not often mention precise sites, these being supposed to be either well known or not of sufficient importance to be especially mentioned in documents whose object is different, there is the further fact that they are sometimes misleading unintentionally through reliance on erroneous tradition or through any of the other causes which mislead us to-day. There is a curious tendency in the minds of most students to place a reliance upon a very old document that would not be given to one that is recent, and any fragment, if only old enough, is usually accepted as almost unquestionable. One may almost say that in general the older a document is, the more trust do students put in it, and the more elaborately will they build theories upon it, whereas the same if but few years old would not receive notice. In such a study as the present, undoubtedly the best documents are detailed maps made at the time on the spot by surveyors or officers, especially if prepared to accompany official reports, where there is every inducement to truthfulness and no reason for falsehood. With such maps one can go to the ground and by measurements locate a spot where stood some structure of which neither trace nor tradition remains. General maps of small scale are much less trustworthy; for simply practical reasons connected with their drawing or engraving may make them locate places wrongly, as, for instance, a fort might be placed on the wrong side of a river because there is more space for it and its name there than on its proper side. In locating early settlements after the period of surveys there is little difficulty, for records and maps are carefully preserved in the official Land Offices, where they are easily accessible, and may readily be compared with the modern topography. Old plans, indeed, often contain most important hints upon our present subject, for the early surveyors in unsettled districts naturally put all available information and marked all possible localities upon their maps.

Historic sites are, of course, of all degrees of importance, from those of events of world-wide interest and importance down to those so local as to be not regarded by any but the most curious; and in this study it has been difficult to draw a line between those to be included and those to be omitted. I have tried to err rather upon the side of including too much, but I hope the reader will not find much that is too trivial. Lengthy as this study appears, however, it is so far from exhausting its subject from a local point of view, that it is to be regarded rather as a foundation for

future study; and there is a great amount to be done in particular localities, too, on sites not likely to be of interest outside of those places.

The subject of historic sites in New Brunswick naturally falls into periods answering to those of our general history, which segregates itself naturally into six fairly distinct periods—the Prehistoric (or Indian), that of Exploration, the Acadian, the English, the Loyalist and the Post-Loyalist.

I. THE PREHISTORIC (INDIAN) PERIOD.

In this period, the subjects of particular importance to our present study are the following:—(1) The distribution of the Indian tribes; (2) the sites of their villages, camping places and burial grounds; (3) their routes of travel. Though occasional references to these topics occur in local historical writings, these are extremely scanty, and no attempt has been made as yet to treat the subject comprehensively.

1. The Distribution of the Indian Tribes.

When the country now forming New Brunswick was first discovered, it was occupied by two distinct Indian tribes, distributed well over it on the principal rivers and harbours. The early writers, who often refer to them, while at times differing in details, agree in the main as to their distribution; and as set forth by them it differed but little from that of the same tribes in the present day. The Micmacs or Souriquois occupied the entire north shore from Gaspé to and into Nova Scotia, with villages on the principal rivers; and the head of the Bay of Fundy was theirs also. The Maliseets or Etechemins occupied the valley of the St. John and the Passamaquoddy region. The division of the tribe inhabiting the latter was known as the Passamaquoddies, while those of the St. John were Woolahstukwik, though this name does not occur in any documents, and never came into use by Europeans. Beyond our present limits on the Penobscot lived another very closely related tribe, the Penobscots.[1]

The limits between these tribes were well understood, and each in the main kept to its own hunting grounds. Early writers and the present statements of the Indians agree that each tribe was considered to possess the entire river systems on which it lived, so that the boundaries came on the watersheds between the principal rivers. These boundaries are shown thus drawn on the accompanying map, No. 12. I have been told by Mark Paul, a chief of the Micmacs, that the boundary between his tribe and the Maliseets reached the Bay of Fundy at Martins Head. There is some reason for supposing that at the time of Cham-

[1] The relationship of these tribes, as given by their own traditions, is discussed by M. Chamberlain in the New Brunswick Magazine, I., 41.

plain's visit, in 1604, the Micmacs occupied the mouth of the St. John, but if so they must soon have abandoned it, as its later history is connected altogether with the Maliseets. The boundary between Maliseets and Passamaquoddies, practically one tribe as they were, was not a sharp one; but, such as it was, it would naturally begin on the coast at Point Lepreau, and follow the watershed. I do not know where upon the coast the boundary between Passamaquoddies and Penobscots began, but the topography would suggest that it was not far west of Machias.

It is stated in many historical works, as, for instance, in that of Cooney, that the Mohawks once occupied the valley of the Restigouche, and even extended to the Nepisiguit, and that, too, within historic times. The Indians themselves have traditions to that effect. There is, however, not the slightest historical support for such a belief. It is probably entirely erroneous, and arose from a magnification of the occasional incursions or even longer visits of the Mohawks to this region. It is not likely that the Indian traditions are very trustworthy evidence upon such questions. The Gaspesiens of LeClercq were, of course, Micmacs.

2. Indian Villages and Camping Grounds.

The mode of life of the Indians, dependent as they were for subsistence upon fish and game, imposed upon them a migratory existence. They must take what game the season afforded, and go where it was to be found. Hence they moved to the places of abundance of fish and shell-fish in spring and summer, and to the haunts of the big game in its season in autumn and winter. This constant movement allowed of but few permanent villages, though it necessitated numerous camping grounds of greater or less extent and length of occupation. Indeed, as to villages with a fairly permanent population, we have records of but very few, and even they were at times entirely abandoned; these included *Meductic*, *Ek-pah-hak* (Aucpac), and *Madawaska*, on the St. John, *Richibucto*, *Burnt Church* and *Old Mission Point* (Restigouche), on the North Shore, and perhaps Pleasant Point, at Passamaquoddy. Several of these situations, occupying rich intervales, are particularly favourable for cultivation of the soil, and it is probable that in these places some simple crops, such as Indian corn and pumpkins, were cultivated in a rude manner, tending to give fixity to the settlements; for agriculture necessitates stability, as the chase necessitates constant movement.

When we consider the temporary camping places, however, we find that they existed, and still exist, in great number and in all degrees of importance, from those occupied for long periods by many families, down to the tiny sites used for a night by the transient hunter. No doubt these sites were much more numerous than we now know of in the settled parts of the province, and my list of the more important ones that

follows must be very incomplete, though it is as full as I have been able to make it. In the yet unsettled parts of the province these sites are still used somewhat by the Indians and by white hunters, so they may still be identified; but in extent and importance they are far behind those in the settled parts. Much the same motives that attracted the Indians to certain sites attracted the early settlers, and many of the most important camp sites are now covered by villages or towns, and every trace of Indian occupation is obliterated. As to the sites of such settlements, we have four sources of evidence: first, historical references in documents and on maps, of which use has been made in the list that follows, many of the earlier references being, however, too indefinite for fixing exact sites; second, there is tradition, still near enough to the time of Indian occupation to be of some value, especially if backed by relics found upon the sites; third, there are the great shell-heaps on the coast, best of evidence of a camp site, since they give a rough quantitative measure of the extent of its use and even of its antiquity; fourth, there is the testimony of place-names, those marvellously persistent memorials of past events and conditions. The tendency to give descriptive names is very strong in early settlers, the stronger the more illiterate they are, and the presence of Indians at a given place affords one of the best of descriptive terms. The name *Indian River* occurs in New Brunswick once, *Indian Cove* once, *Indian Falls* once, *Indiantown* twice, *Indian Beach* twice, *Indian Camp Point* once, *Indian Brook* twice, *Indian Bay* once, *Indian Lake* twice, *Indian Mountain* once, *Indian Island* eight times, *Indian Point* at least twelve times. These names in some cases are the last memorials of their presence in those places.

Of the several influences determining the situation of camping sites, the first would be nearness to a river, for the birch canoe was the Indian's sole vehicle of locomotion. Undoubtedly the next would be the abundance of game, particularly of game occupying a fixed position, as shell-fish do, or following definite paths through places where their flight may be interrupted, as fish do. In such places the Indians could remain for long periods of time; whilst in the pursuit of the wide-wandering large furred and feathered game they must keep always on the move. Consequently, next to the few villages already mentioned, their camp sites were most abundant in the following situations:—first, near the great clam beds of the Bay of Fundy, in particular about Passamaquoddy Bay, where they are marked by the great shell-heaps, chief among which are those at Oak Bay, Minister's Island, Bocabec, Fryes Island, with others of lesser extent, too many to mention. Some of these shell-heaps have been studied with care by Professor Baird, and the one at Bocabec with particular care by Dr. G. F. Matthew, whose paper detailing his results is by far the most important contribution we have to the knowledge of

the life of our Indians in prehistoric times. It has been generally supposed that these camp sites at the shell-heaps were occupied only in spring and summer, when the best fishing is past and the big game is out of condition, and that they were abandoned in autumn and winter for the inland hunting, but Dr. Matthew has found evidence to show that they may to some extent have been occupied the entire year. Again, on the north shore, the great oyster beds extending from Shediac to Caraquette, and formerly of greater extension and abundance than now, must have been a great attraction, though the shell-heaps in that region have not been at all studied. Since, however, that entire coast is slowly sinking, many shell-heaps must have been washed away. Probably the shell-fish were used only in spring and summer, and the reliance placed for the winter upon big game. Shell-fish are not a sufficient winter diet. In their hunting trips for big game, only temporary camps were used as centres for the hunting, and these soon abandoned. We obtain a vivid picture of the hardships of such a life in the narrative of John Gyles, who describes what was doubtless a typical winter, and in the narratives of several of the Jesuit Fathers who accompanied the Indians in their winter hunts. Second, waterfalls are great fishing-places, for in the basins below them the fish pause to rest before beginning the ascent. Thus, at *Aroostook*, *Grand*, *Salmon* and other falls were important camp sites. The mouths of small rivers were also, for similar reasons, good camping spots. Again, the head of tide on the rivers was a favourite place, probably for the good salmon-fishing likely to be found there. In this situation were *Aucpac*, *Indiantown* (Renous), *Red Bank* and *Mission Point*, some of the most important of the prehistoric sites. Third, are good sites as a centre for the killing of porpoise. This has determined the sites of the camps at *Indian Beach*, Grand Manan, and *Indian Cove*, just west of Point Lepreau. Again, the ends of portages were important places, but less of course for game than for rest before and after the labour of portaging. This, in part, determined the position of *Meductic*. Again, deep, muddy pools in sluggish rivers, suitable for eels, of which the Indians are very fond, are important places. Thus have been located the important settlements of *Eelground*, Miramichi, and *Eel River*, Restigouche, and perhaps the eel-pools at Benton had something to do with the site of Meductic. Some minor settlements near the head of the St. Croix were thus determined. An example of a particularly well-placed village was *Burnt Church*. Of this Perley says in his Report of 1841 (xcix.) :—"The small River furnishes Oysters, Lobsters, Sea Trout and Eels in abundance : in front of the Point large quantities of Salmon and Bass are caught annually, and there are plenty of water-fowl."

Minor influences determining the exact positions of camp sites were as follows :—First, a level place, an intervale or low terrace, near the water, for their wigwams, a good gravel beach for their canoes, and a

spring. The need for a spring by the salt water is obvious enough, but even on the clearest rivers, where the purity and coolness of the water far exceeds that of the water supply of many modern cities, the Indians still seek a spring, and most of the camping places along our rivers to-day are near good springs. How much this meant to them may be gathered from the narrative of Gyles, in which the great spring at Meductic is more than once mentioned.

Defence against enemies seems hardly to have been a factor in the choice of situations; that was probably attained by the palisades of their villages. Probably, however, a good look-out place in the vicinity, commanding a view of the water-ways, was an advantage, and Denys tells us that at the Indian fort at Richibucto a tall pole had been erected for this purpose.

When many of the favourable conditions for a camp site came together—a good game country, good eel grounds, the end of a portage, an intervale flat capable of easy cultivation, a good spring—the result was a large village; this was the case with Meductic, and here not only was a village, but a fort as well. That our Indians built forts there is no doubt. Thus, Champlain in 1604 found on Navy Island a "cabin in which the Indians are fortified," and Lescarbot described the village of St. John as "on a knoll surrounded by tall trees attached one to another." Villebon, in his Journal of 1697, speaks of the old fort at the mouth of the Nerepis as an Indian fort, as he does also of that at Meductic. St. Valier, in 1688, calls Meductic a fort, as does also Cadillac in 1692. Again, there is an old fort on an island in Shediac Harbour which may be Indian, and a very clear account is given by Denys, in 1672, of the Indian fort at Richibucto, which he says had bastions. Probably this latter feature was learned from the French, and no doubt their forts were originally merely fences of pickets built as a protection against their dreaded hereditary foes, the Mohawks, whose forays, according to their traditions, extended into New Brunswick, though there is no record of such an incursion within historic times. It is said by tradition that the settlement at Mission Point was inclosed by a stockade.

It might be supposed that the present Indian reserves would mark the sites of ancient camping places, but such is not often the case. On the St. John, the only reserve near an ancient camp site of any importance is that of Madawaska. The sites of Meductic and Aucpac are no longer theirs, but the newer Woodstock and Indian Village reserves have succeeded them. In Passamaquoddy there is no reserve on the Canadian side, but there is a Maine reserve at Pleasant Point and another near Princeton. The old camping ground near Dorchester is no longer occupied, but that at Folly Point replaces it. On the north shore, Burnt Church reserve covers an ancient camping site, and perhaps that at Eel-ground, and probably that at Red Bank. Many changes have been made

in the location of reserves in this century, and invariably, I believe, in the interest of the Indians, who have always received consideration from both Provincial and Dominion governments. When they have shown a tendency to settle in particular places, the government has usually acquired the land and reserved it to them, at the same time selling places that they abandon. This has been the history of settlements at Indian Village (Kingsclear), Indian Island (Bathurst), and some other sites. The Indians show more and more a tendency to settle near the larger towns and the summer resorts, where they find a market for their wooden and basket wares, and some light, congenial employment. They are usually allowed to camp where they will, and there are but few land-owners churlish enough to refuse them permission to occupy any site they fix upon. They may be allowed with perfect safety to camp where they choose, for they are honest and inoffensive.

In listing the camp sites, as well as in other lists through this paper, I shall group them according to the natural river-system divisions of the province, as follows:—

1. The Passamaquoddy District: All rivers of this system to Point Lepreau.
2. The St. John District: All this valley and to Martins Head.
3. The Petitcodiac-Misseguash District: All the head of the Bay of Fundy and to Baie Verte.
4. The Richibucto District: From Bay Verte to Point Escuminac.
5. The Miramichi District: From Escuminac to Tracadie.
6. The Nepisiguit District: From Tracadie to Belledune Point.
7. The Restigouche District: From Belledune Point to beyond the Restigouche River.

The watersheds are of course the boundaries between ths heads of the rivers.

1. The Passamaquoddy District.

A.—Below Forest City. Between Grand and Chepednek Lakes, on the Canadian side, below Tupper's Cove, is a point known to residents as an ancient Indian camping ground. On a plan of 1832 it is marked as "Etienne's Improvements," and along the river in front is "Etienne's Eel Works."[1] This passage between the lakes must have been a great fishing place.

B.—Indian Island. At the lower end of Chepednek Lake. I have been told by the Indians that in old times they came to this vicinity for cranberries, which grew here in great numbers, and probably this island was their camping place.

C.—St. Croix. A plan of 1837 marks on the site of the modern village of St. Croix, "Eel Works, Kilmaquac, a deserted Indian village."[2] The site is an ideal one for a camping place, and there are falls just above. It is

[1] This phrase "Eel Works" is curious. I have noticed it but twice, here and in C following. Probably it refers to weirs or traps set to catch eels.

[2] The name Kilmaquac appears on the map of the Maritime Provinces in Stanford's Compendium 1897, a remarkable case of survival.

marked also as an "Indian Town" on Titcomb's Plan of the Scoodik, 1792. The 1837 plan has on a point on the west side of the exit from the lake, "La Coote, an Indian, settled here," and opposite, on the east side, "Clearing made by Indian Newell." There is also a Passamaquoddy village, at Lewis Island, Maine, on what was probably a very ancient camping place. The 1785 map of the Scoodic marks "Indian Wigwams" about halfway between Lewis Island and the main river on the north side, and the Titcomb Plan of 1792 marks it on the south side.

D.—Salmon Falls. On the Canadian side, on the site of the Cotton Mill, was an ancient camping place. It was here that Captain Church, in 1704, attacked the Indians and destroyed their store of fish, as he relates fully in his well-known narrative. The 1785 plan of Scoodic marks here "Indian Land." There was a burial ground here. (See the Courier series, CIII.) The Passamaquoddies have at present a small settlement at Calais, certainly very modern.

E.—Oak Bay. Near the head of Oak Bay, at Simpson's, on the east side, is an extensive shell heap, indicating a favourite summer camping ground. It is described with others in Baird's "Notes on Aboriginal Shell Mounds." There is said to be another on the west shore opposite, and another on Oak Point.

F.—St. Andrews. From its location, one of the most admirable of all camping sites. It was called by the Passamaquoddies *Kun-as-kwam-kook*. On the Morris Map of St. Andrews of 1784, the point nearest Navy Island, where the C. P. R. wharf now is, is called *Indian Point*, as it is in some of the boundary documents, and no doubt the main settlement was here. Another name applied to the same point by Mitchel in his Field-Book of 1764 was Lue, meant for Louis, doubtless for Lewis Neptune, an Indian chief, prominent in the last century, and who probably lived here. (See Place Nomenclature, p. 267). Some of the boundary documents refer to an important burying-place here; there was one farther up the harbour where now the block-house is, which has been used by the Indians within the memory of men now living. At present the extreme southern point of the peninsula is called *Indian Point*, and two or three families of Passamaquoddies live near the railroad station, though not upon a reservation.

G.—Ministers Island. Facing St. Andrew's, south of the bar, is a fine large shell-heap, indicating a much used camp-site.

H.—Bocabec. On the east side of the entrance of the river is a large shell-heap which has been thoroughly investigated by G. F. Matthew, and described fully by him in the Bulletin of the Natural History Society of New Brunswick No. III. (and also reprinted in No. X.).

Other shell-heaps of some importance occur at many points about Passamaquoddy Bay. Baird mentions them at east side of Digdeguash river, Green Point (Letete), Frye's Island, Bliss Island, Seely's Cove, Popelogan. There is one also at Joe's Point. But the shell-heaps are innumerable, and of all grades of importance, and a complete list of them would run into many dozens. Other camping-grounds are said to occur at Red Beach, Maine, and at Liberty Point, Robbinston.

I.—Indian Point, Magaguadavic, just above Red Rock stream, on the west side. Thus marked on the Campbell and Hedden Map of 1797; it is an intervale point forming the kind of site most liked by them. Allan says in his Report in 1793: "On the river Maggaudavic many make it their home."

J.—Pleasant Point. An ancient Indian village, now the chief village of the Passamaquoddies, called by them *See-by-ik*. It is mentioned as an Indian village in Owen's journal of 1770. According to Lewis Mitchell, one of the best informed of the Passamaquoddies, the chief Passamaquoddy village was first at St. Andrews, then at Indian Island, then at Birch Point, three miles below Pleasant Point, and finally at Pleasant Point.

K.—Indian Island. As the name indicates, this is known to have been a resort of theirs from early times. Lorimer states that they had here a burying-ground. Church found Indians here in 1704.

L.—Campobello. I have found no record of an ancient settlement on this island, though it cannot be doubted they existed there. There is an *Indian Beach* near Head Harbour, and on one late map *Indian Point* is given also to Duck Point at the southern end of the island.

M.—Grand Manan. Indian shell heaps are mentioned by Baird at Grand Harbour, Nantucket Island and Cheney Island, and no doubt exist at many other places. On the charts the southern point of Ross Island is called *Indian Camp Point*. Near the northwest end of the island is *Indian Beach*, where the Passamaquoddies still have a camping place used while hunting porpoise.

N.—At the entrance of Letang River at the head of Letang Harbour the charts show an *Indian Point*.

O.—In a small cove close to Point Lepreau on the west side is an old camping place still used by the Passamaquoddies.

The principal camp sites in this District will be found marked on Map No. 40.

2. The St. John District.

Along the main St. John, Indian camping places and temporary settlements must have been innumerable. This valley not only maintained a considerable population, but it was a great highway for travel, abounded in game and fish, and is well-nigh lined on both banks by ideal camping sites. Particularly at the mouths of the different rivers, where there is almost invariably an intervale or low terrace flat, are the conditions favourable. That such situations were thus occupied is indeed told us by Gyles, who, describing his descent of the St. John about 1690, tells us, "As we passed down by the mouths of any large branches, we saw Indians." It is only the principal of these camping grounds which can be described here.

A.—Madawaska. Probably this was never an extensive settlement. St. Valier, before 1688, found there a cabin of Christian Indians from Sillery, and Gyles, who was there about 1690, says "There an old man lived and kept a sort of trading-house." This is probably the place referred to by Cadillac in 1692,—"Forty-four leagues further, [above Meductic] is another fort where the Canibas ordinarily retreat to when they fear anything in their own country." An "Indian village" is marked below the mouth of the river on the Peachy map of 1783 or later, and on others following it. Allan (in Kidder, 306) says there was a large village there in 1793. Bishop Plessis records that in 1812 but two wigwams remained of a former Indian village.

Perley, in his Report of 1841, fully describes the condition of the village, and gives tradition to show that it was formerly of considerable size. At present there is a small Indian village and reservation about two miles below the mouth of the Madawaska. The Chief of this village has told me that in old times their settlement was just below the mouth of the river on an intervale, and that their burial ground was on a mound easily distinguishable about three-fourths of a mile below the Madawaska.

B.—Grand Falls. I have found no record of a settlement here, but no doubt there were camping places at the ends of the important portage around the falls. Professor Bailey, in his "Relics of the Stone Age," states that Indian implements have been found here in considerable variety. The exact situation of this portage will be described later.

C.—Aroostook Falls. Professor Bailey states that Indian implements have been found here in considerable abundance, indicating a camping ground.

D.—Indian Point. At the mouth of Tobique. Important as this settlement now is (the largest on the St. John), it is nevertheless not very old. It was first legally established in 1801. St. Valier, in his narrative of his voyage down the river before 1688, makes no mention of it, nor does Gyles, nor any writer in the last century that I can find, though without doubt so important a place must have been much used, at least as a camping ground. An "Indian Chapel" is marked here on Foulis' map of 1826, and a full account of the settlement is in Perley's Report of 1841. The name Tobique is said by the Indians, and I believe correctly, to have been given by the whites for the name of a chief who formerly lived at its mouth. The name of this chief appears as Toubick, Tobic, etc., in various documents of the last century, and the name was applied to the river at least as early as 1783 (Munro's Report and Morris' Map).

No doubt Nictau has been an important camp ground from very early times. There is an *Indian Bay* and an *Indian Point* at the eastern end of Nictor Lake, which probably indicate camp-sites.

The site of the village of Hartland is a very favourable one for a camping ground, especially since at the mouth of the Becaguimec is a famous salmon pool; the word *guimec* indeed means in Maliseet, "a salmon-pool." There is an *Indian Brook* and *Lake* on the south branch of the Becaguimec, probably a resort of the Indians.

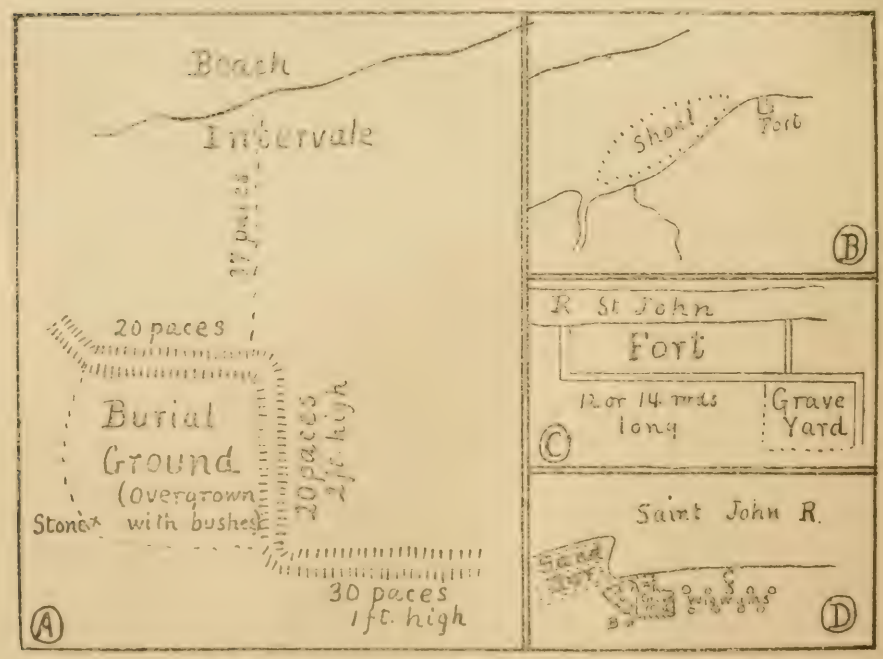
E.—Meduxnakeag. There was a camping place there mentioned by Gyles, and it was probably on the island in front of the river, as pointed out by Mr. Raymond in his "Old Meductic Fort" (p. 241).

F.—Meductic. The history of this village has been traced by Rev. W. O. Raymond with the most satisfactory fulness and care, in his "The Old Meductic Fort." This village was undoubtedly historically the most important on the River St. John, and the only permanent settlement on the river occupied from the beginning of the historic period down to the middle of the present century. It stood on a rich intervale at the beginning of the Meductic portage to Eel River (to be described below) about four miles above the mouth of Eel River, and included a fort as well as a village. The map of the surroundings given by Mr. Raymond (page 226) shows its particular location on the flat. St. Valier before 1688 spoke of it as the "premier fort de L'Acadie," of course in reference to its position as one came from Quebec. Villebon in his Journal of 1691 calls it an Indian fort, and Cadillac in 1692 also calls it a fort. Gyles and Pote have much to say

of it, and there is a full account of it in 1841 in Perley's Report. Shortly after 1841 the Indians were removed from Meductic to a site purchased for them by the Provincial Government three miles below Woodstock, where a few of them still live. Portions of the fort and burial ground are still visible and well known, but there is some doubt as to the precise relative position of the two. In map No. 1, A represents my own plan made on the spot in 1892; B is from an old plan in the Crown Land office; C is from a Ms. sketch of the locality made by Mr. Hay, the owner, about 1892, and D is from Mr. Raymond's Map, made in 1896.

Morley's Rock, in Eel River, above Benton, is said locally to be an old Indian camping ground.

There is an *Indian Lake* on the Sheogomoc, which probably marks a resort of theirs.



MAP NO. 1. SITE OF MEDUCTIC FORT.

A. Plan made by the author in 1892.
B. From plan in Crown Land office made in 1790.
C. Plan made by owner of the fort site, 1892.
D. From Raymond's map of 1896.

G.—The Morris Map of 1784 marks a group of "Indian Wigwams" just above Middle Southampton, on the east bank of the river, but I know nothing further of this location.

H.—Indian Village, Kingsclear. This village, now the second in importance on the St. John, is comparatively modern. The Indians moved here after the sale of *Aucpac*, in 1794.

I.—Ek-pa'-hak. (*Aucpac, Oak Park, etc.*) This village was at Springhill, about the mouth of Springhill Brook, including also Harts and Savage Islands.

In the last century this was the most important village on the St. John, much surpassing Meductic after about 1750. There is no reference whatever to it that I have been able to find before the census of 1733 which mentions *Ecoupay*. Pote speaks of it under the name *Apog* and *Apoge*, in 1745. Had it existed much earlier it could scarcely have escaped mention in some of the many documents of the preceding century. Pote refers to it as a considerable village. Upon Morris' map of the St. John, made originally in 1765 (my copy is about 1774), occurs the following important inscription: "Aughpack is about Seven Miles above St. Anns, and at this place was the Indian Church, and the Residence of the French Missionary, the Church and other Buildings about it are all demolished by the Indians themselves. An Island opposite Aughpack, called Indian Island, is the place where the Indians of St. John make their Anual Rendezvous, on this Island is their Town consisting of about Forty mean Houses or Wigwams built with slender poles, and covered with Bark; in the Center of this Town is their Grand Council Chamber constructed after the same manner as their other Houses, and here all differences and disputes are settled and Hunting Grounds Allotted to each Family before they begin their Summer Hunts. These Affairs are generally settled about the Beginning of July."

In 1765, then, Aucpac would appear to have been abandoned. But it was not for long, for, as an entry in the registers of the church at Indian Village shows, in 1767 the bell and other articles of the chapel at Meductic were removed to Aucpac, and in 1777, as proved by the journal of Colonel Allan, the village was again occupied and important. It was thenceforth inhabited by the Indians until 1794, when they sold the site of their village, and also Savage Island, and removed in a body to Indian Village, where they have since lived. The Indian Island on which the council chamber stood was the present Savage Island. Aucpac was also called *Saint Annes*, a name apparently transferred from St. Annes Point, and it was taken with them when they removed to the present Indian Village. As applied to Aucpac, it persisted for a time as the name of Harts Island, which on old plans is called Sandon (corruption of Sainte Anne) Island. Savage Island is called in Maliseet, *N'ca-ne-ò-dan*, or "Old Town," while Harts Island is *Wa-ca-loo-sen*, "a fort," and their tradition is that Savage Island was their original stronghold, but it was too large to defend, so they moved to the smaller one.

Indian bodies have been found at Curries Mountain in excavating for the railroad, showing a burial ground there.

J.—St. Annes Point. There appears to have been an ancient settlement at St. Annes Point on or near where Government House now stands, and an ancient burial place there. The latter is locally believed to have been in the shrubbery behind the present carriage-house. In 1765 a grant of four acres here was made to the Indians by the Nova Scotian Government.

Cadillac in 1692 speaks of a Micmac fort at a place called Naxehouac [Nashwaak], but there is no other evidence of this.

K.—Indian Camps at St. Marys. This considerable settlement opposite Fredericton is comparatively modern. The Indians have had no grant or reservation here, but have held a small tract from early in this century simply by occupation. They were probably attracted to the locality through its proximity to Fredericton.

L.—Oromocto. At the mouth of this river, near the bridge, was an Indian burial ground, mentioned by Ward (p. 40), and probably here was an Indian

camp site. There is now at Oromocto a reservation and settlement, both modern.

It is altogether probable that the Acadian Indians, in one locality at least, made Pictographs, the case of Fairy Lake, in Nova Scotia, being well known and often described. Nothing of this kind is known in New Brunswick, with the single exception of a possible case on the Oromocto River. It is thus described by its discoverer, Mr. C. W. Beckwith, of Fredericton, in a letter to Dr. G. F. Matthew, of St. John, and I am indebted to Mr. S. W. Kain for the opportunity to quote it here: "In August, 1890, coming down North Oromocto River in a canoe from the lake, I landed on the westerly shore to camp, about one mile above the mouth of Lyon's Stream. We deposited our baggage on a large flat rock, laying the canoe alongside of it. It was dark when we landed, but in the morning my son, who was with me, called my attention to the rock. On its face was roughly cut in a plan or map, apparently answering to the forks of the Oromocto River, with curious figures; some that appeared to indicate men and arrows pointing in different directions. The stone was, I think, common sandstone, cut into by a harder substance, and the figures had an odd appearance. There were no letters, and it did not appear to have been made by a civilized being, but looked to me like some old Indian landmark. The stone, I should judge, was irregular, almost round, about four or five feet across, and varying from one to three feet in thickness. The water was very low at the time."

M.—In Marston's diary of 1785, it is said there was an Indian settlement on Salmon River, two miles below the Gaspereau, but I know nothing of it. There must have been many important camp sites about Grand Lake.

N.—Indian Point, on the thoroughfare between Grand and Maquapit Lakes. An account of this site is given in the Bulletin of the Natural History Society of New Brunswick, VI., 6, and XIII., 84. From the abundance of relics found there, it must have been a camp site of much importance. The only historical reference to it known to me is a mention of Indians camping back of Maugerville in 1778. (Collections N. B. Hist. Soc., I., 322.)

The Indians have a favourite camping place just above the village of Gagetown, and, probably, judging from its situation, this, or some other near it, has been used from very ancient times.

O.—It is said by residents that there was an old Indian camping ground on a point back of Owen Cory's farm on the Canaan River, south side, about five miles above the North Forks.

In a letter of Shirley to Lawrence (N. S. Archives, 438) he speaks of "The old Indian town called Naducteek, which is situated at or near the portage between the rivers St. John's and Patcotyeak," but of this I can find no other mention The small stream below Spoon Id. on the west side is called by the Maliseets *No-dec-tic*, and possibly a village stood on the intervale there.

P.—Nerepis. At the mouth of the Nerepis formerly stood a small fort, whose location and history will be later described. Originally it appears to have been built by the Indians, as were those of Meductic and Richibucto for Villebon, in his diary of 1696, speaks of the "fort des Sauvages de Nerepisse."

Q.—Apohaqui. According to Allison, "There was a large Indian village of some description and of more or less permanent character.... at the junction of the

Millstream with the Kennebeccasis," as shown by the presence of an Indian burial-ground, and numerous Indian relics dug up there. This village stood on the lower or western angle between the two rivers. At present there is a small modern Maliseet encampment near the village of Apohaqui. There is some reason to think that Ap-a-hak is the ancient name of this village, which suggests a possible connection of the name with Ek-pa-hak (Aucpac).

The three small islands known as "The Brothers," in the Kennebecasis off Milledgeville are now an Indian reserve and occupied irregularly by the Indians.

R.—St. John. Champlain first entered St. John Harbour in 1604, and on the map of the harbour in his narrative a cabin is drawn on Navy Island, and with it is given a letter answering to this description: "Cabane où se fortifient les sauvages." This would seem to settle the site of the village even though Lescarbot, who visited the harbour two or three years later, describes it as upon a hillock or knoll. He says, "La ville d'*Ouïgoudi* (ainsi j'appelle la demeure dudit *Chkoudun*) estoit un grand enclos sur un tertre fermé de hauts et menus arbres attachez l'un contre l'autre, et au dedans plusieurs cabanes grandes et petites, l'une desquelles estoit aussi grande qu'une halle, où se retiroient beaucoup de menages: et quant à celle où ils faisoient la Tabagie, elle estoit un peu moindre" (Histoire, II., 570, ed. 1866). This name, *Ouigoudi*, applied by Lescarbot to the village, is the true Indian name for a village site, though by Champlain it was supposed to apply to the river. This error of his has long persisted and is repeated by some writers even at the present day. (See Place-Nomenclature, p. 269).

S.—Indiantown. In 1779 an "Indian House" for trade with the Indians was established here, but I have not found any earlier reference to a camp site or settlement. No doubt, however, it was an important camping place, for it is the lowest good spot for the purpose on the river above the Falls, and was near the portage, later to be described, which, to avoid the Falls, ran across the ridge from Marble Cove to the Harbour.

It is probable there was a camping place at Mahogany Island, the Indian name for which means "place for clams."

There are temporary camping places at several points along the river, notably Hampsted, Norton, Rothesay. The Indians own no land at those places, but are generally allowed to camp where they choose.

There is an *Indian Lake* on the Musquash which perhaps marks an Indian resort.

3. The Petitcodiac-Misseguash District.

The information I have been able to gather on this district is very scanty, and there must be many important camp and village sites that I have missed.

A.—Indian Mountain. This hill is eight miles northwest of Moncton. It is said locally to be so named because the first settlers found Indians there when they arrived, but I am told by a resident there was no regular camping-place there. Possibly it was a centre for hunting cariboo.

B.—Salisbury. There is said to have been a regular camp-ground here. Perhaps it was at the end of the portage leading to the Washademoac.

C.—The Bend. It is said by the Indians there was formerly a camping-ground at Hall's Creek, probably on the site of Moncton.

D.—Fort Folly. This considerable reservation is on the Petitcodiac, a mile and a half above Folly Point. It was established in 1839, and from its very favourable situation is probably an ancient camp site. The Indians removed here from near Dorchester, whence it is sometimes called the Dorchester Reserve.

At the head of the Memramcook is a branch called on some maps (as Wilkinson's) *Indian stream*. It was probably so named because it was part of the old Indian portage from this river to the Scadouc, and not because of an Indian settlement.

E.—Just to the northward of the mouth of Shepody River is a small island called on the charts *Indian Island*, which perhaps marks a resort of theirs.

F.—Dorchester. Early maps, particularly the fine French map of the Isthmus of 1755 (1779) places "Indiens" with a number of houses on some stream south of the present Dorchester, but the topography is too imperfect to allow us to locate this settlement exactly. It may have been on Johnston's Creek flowing into Grand Ance, or on Palmer brook just south of Dorchester. A resident, Mr. S. C. W. Chapman, of Dorchester, tells me there was before 1834 an Indian settlement near Dorchester, where Sackville street crosses Palmer Brook, east of the brook and north of the road. He states there was another on the Chapman farm, north of Dorchester, south of the road to Woodhurst. The Indians from both of these settlements afterwards settled on the Fort Folly Reserve (see above, D) often called the Dorchester Reserve.

G.—Westcock. I am told by Mr. Chapman, of Dorchester, there was formerly an important camping ground on Westcock Brook, with a trail between it and that on Palmer Brook, near Dorchester. Another was on Allan Brook, near Wood Point.

H.—Midjic. This is said by the Indians to have been formerly one of their most important camping grounds.

I.—Cape Tormentine. South of this point the map marks *Indian Point*, known to be a former camping place. An account of the relics found here has been published by W. L. Goodwin, in Canadian Record of Science, Jan., 1893.

It is said that important settlements in the last century existed at Tidnish and Agamore Heads, in Nova Scotia. Franquet's map, given later in this paper (Map No. 26) shows traces of Indian settlement near Baie Verte, and he mentions the cabins of five or six families of Indians between Fort Gaspereau and Bay Verte.

4. The Richibucto District.

On the small island at Shediac, called *Indian Island*, are remains of a small fort to be described later; possibly it was not a French, but an Indian fort. It is said there were formerly important camping grounds at the mouths of the Shediac and Scadouc Rivers. There is a small reserve at Shediac not now occupied.

A.—Indian Point, Buctouche. A plan of 1794 marks "Indian Village" just west of the point, between it and Mescogones, or Black River. The present Buctouche Settlement and Reserve is about two miles west of Buctouche Village.

B.—Richibucto. A large Indian village and Fort formerly existed on this river. It is first distinctly referred to by Denys in 1672 (p. 176), who says it stood on the border of the basin. "Le Capitaine de Rechibouctou . . . a sur

le bord du bassin de cette riviere un Fort fait de pieux assez gros, avec deux formes de bastions, & dans lequel est sa cabanne & les autres sauvages cabannent autour de luy." The fort is mentioned also in 1688 by St. Valier. The local tradition is that this village was on Indian Island, just inside the entrance to the harbour on the south. It is, however, possible that it stood on the present site of the town, and that the Indian Island settlement was later. The present Indian Island settlement is on the mainland, opposite the island.

Some charts mark an *Indian Village* on the south side of the river, below Kingston, and there is now a large Indian settlement on a reservation at Molus River, known as Big Cove. There must have been many other important villages in this district.

5. *The Miramichi District.*

A.—Clearwater. An ancient camping ground at the mouth of this stream is mentioned by Bailey in his "Relics of the Stone-Age" (p. 6). Mr. Wm. McInnes, of the Canadian Geological Survey, who has examined the place, writes me as follows about it: "In the angle on the left bank of these streams there were to be seen some interesting remains of old defence works, consisting of a cellar-like excavation with elevated rim towards the Miramichi, and several smaller shelters of heaped-up large boulders extending down the bank of the river at intervals of fifty yards or so from one another, each capable of concealing two or three men only. There was a mound also about five feet high by eight in diameter, which, through want of any tools, we were unable to properly examine. On the opposite bank of the Clearwater I dug up one large spear-head with several broken arrow-heads of quartz or jasper. These were lying in a stratum of soil and ashes about ten inches below the present surface. All through this layer of ashes, etc., were to be found chips and broken angular pieces of the red jasper." The same locality has been described for me by Mr. John Hayes, of Hayesville, as follows: "At the mouth of the Clearwater . . . is an old camping ground. There have been holes dug in the ground from ten to fifteen feet across, and about six feet deep. I helped to dig some of these holes out, and found a number of stone axes and lots of stone arrow-heads, whose colour is dark red or white. These holes are nearly filled with leaves and other stuff that has collected in them, but one can tell where they are quite easily. They have all been walled up from the bottom with rough stone." It is plain that a most interesting locality here awaits thorough investigation.

At the Forks, mouth of Cains River, Indian relics have been found, and the locality is most favourable for a camping-ground.

B.—Indiantown, at the mouth of the Renous. Probably an old settlement, though I have found no special reference to it. There is a reserve, not now occupied, on the Renous.

Several branches of the Miramichi are named for Indians who lived on them, probably at their mouths. Such are *Cains*, *Taxis*, *Renous*, *Bartholomews*, *Barnabys*, *Bartibog*. (See Place-Nomenclature, page 189.)

C.—Chalmers, in his Geological Report for 1887, N 31, mentions an old camp-site a few miles above Derby Junction.

D.—Red Bank. This a large settlement on a reservation, and probably an ancient site. It is probably the "old Indian Town" mentioned in 1801 in Coll. N. B.

Hist. Soc., II., 95. Across the river from it is another at *Indian Point.* At Big Hole, near the mouth of the Sevogle, is a reserve not occupied.

There is also said to have been a camp ground on the land of Chas. Sargeant, above Douglastown.

E.—Eel Ground, above Newcastle (in Micmac *Na-doo-aan*). This is at present the second largest Micmac settlement on the Miramichi, on a large reservation.

Two miles above Strawberry Point on the north side of the river on the shore are said to be the remains of an old Indian burial-ground.

F.—Burnt Church. This is one of the most ancient and important Micmac settlements in this district. In Micmac it is called *Es-kun-oo-ob-a-dich,* and without doubt this is the place called *Skinoubondiche* in St. Valier's narrative of 1688. It was here, St. Valier says, the three leagues of land offered to the Recollets for a mission by Sieur Richard Denys de Fronsac were chosen, and the mission was established in 1685-86, and probably from that time to the present it has been occupied by the Indians, and a mission nearly continuously maintained. In 1758 or 1759 the church was burnt by the English, originating its present name. This mission is referred to by LeClercq in his work of 1691 on Gaspé. There is a large Indian reserve here and a considerable settlement, which is very old. Perley's account of its favourable situation has been already quoted. A brook on this reserve is called "Reserve" or "Indian" Brook.

There must have been many camp sites along the shores of Miramichi Bay, of which I have no record. On the south side of Miramichi Bay there are said to have been camp sites of minor importance at the mouth of Bay du Vin River, at Hardwicke, and on the eastern shore of Lower Bay du Vin Bay.

G. Indian Point, north side of the entrance to Tabusintac River. An account with map, of the locality and of Indian relics found there, is given in Bulletin of the Natural History Society of New Brunswick, No. V., and by Chalmers in his Geological Report for 1887, N 31.

There is a Reserve on the Tabusintac not now occupied.

6. The Nepisiguit District.

A.—Pokemouche. On this river is an Indian reservation not now occupied. Perley refers to a former reserve in his Report of 1841.

B. Indian Point, south of Shippegan Village. A favourable situation, probably much used.

C.—Indian Point, Miscou Harbor. So given on an old plan, and no doubt marking an old camp-site, (see Map No. 34).

D.—Money Island. Miscou Harbor. This is said to have been a favourite Indian camping place in past times, and there is an Indian burial-ground there.

E.—Indian Island (or St. Peters Island) in Bathurst Harbor. Now an Indian Reserve, and occupied by a very small settlement. There is also a reserve on the river at Rough Waters, which includes an island known as *Prisks* or *Indian Island.* No doubt there was an important camp-site at Grand Falls, below which the salmon fishing is particularly good.

Probably there was a camping-site at *Indian Falls,* as implied by its name.

No doubt too there were sites at the mouths of all of the rivers along the Bay Chaleur, and at Caraquette, but on these I have been able to obtain no information.

7. *The Restigouche District.*

A.—Old Mission Point. The tradition among both Indians and whites is that the settlement now at Mission Point, Quebec, opposite Campbellton, was formerly at Old Mission Point on the New Brunswick side. Herdman in his History of Restigouche states that at Old Mission Point was the land granted by Richard Denys in 1685 for a Mission, and that there was formerly a village there, stockaded, with a chapel and burying ground within. This is probably correct. Many Indian relics have been found on the point, and many skeletons have been unearthed by the washing away of the banks. This was no doubt the village of Restgouch mentioned in the Jesuit Relation of 1642, and by St. Valier in 1688. The movement across the river must have taken place about the middle of the last century, for the fine Survey map of about 1754 marks "Village Sauvage" on the Quebec side. Herdman states that they removed to the Quebec side in 1745, and Plessis places the formation of the mission in 1759. Von Velden's map of 1785 has "Indian Village La Mission," on the Quebec side, and he states they have a neat log church.

Probably there were camping-places at the mouths of the principal branches of the Restigouche, all of which have admirable sites for the purpose.

B.—Dalhousie. This place affords a most admirable camping-site. On the French Chart of about 1778 the point on which Dalhousie stands is called *Indienne Pointe*, and the island lying off Dalhousie is *Indienne Isle*. *Indian Point* occurs also on Purdy, 1814, and Bouchette, 1831.

C.—Eel River. Here is an Indian reserve and a settlement, which, as the fishing for eels is one of the best in the country, is probably on an old site.

D.—Heron Island. In Micmac this island is *Tes-ne-gek*, and LeClercq in 1691 refers to it as a famous place and a cemetery of the Indians of Restigouche, "l'Isle de Tisniguet, lieu fameux et ancien cimetiere des Gaspesiens de Ristigouche."

Indian relics have been found at the mouth of Jacquet River, indicating a camp-site. Probably there were camping-grounds at the mouths of all the rivers of this coast from Eel River to Nepisiguit.

3. Indian Routes of Travel in New Brunswick.

The Indians of New Brunswick, like others of North America, were, within certain limits, great wanderers. For hunting, war, or treaty-making, they passed incessantly not only throughout their own territory but over that limit into the lands of other tribes.[1] The Indian tribes of Acadia have never, within historic times, been at war with one another, but they joined in war against other tribes and mingled often with one

[1] John Allan in a report of 1793 (Kidder, 308) says :—"The very easy conveyance by the Lakes, rivers and Streams so Interspersed in this Country, they can easy take their women children and baggage, where ever their Interest, Curiosity, or caprice may lead them, & their natural propensity for roving is such that you will see families in the course of a year go thro' the greatest part of this extent."

another for that and other reasons. In facilities for such travel our Indians were exceptionally fortunate, for the Province is everywhere intersected by rivers readily navigable by their light canoes. Indeed, I doubt if anywhere else in the world is an equal extent of territory so completely watered by navigable streams, or whether in any other country canoe navigation was ever brought to such a pitch of perfection, or so exclusively relied upon for locomotion. The principal streams of the Province head together curiously in pairs, the country is almost invariably easy to travel between their sources, and a route may be found in almost any desired direction, features which come out well in the accompanying map of New Brunswick, showing the Indian routes of travel. (Map No. 12.) But it was not only this fortunate arrangement of the rivers which made travel easy, but also the way in which the Indian adapted himself to it by the construction of his exquisite birch canoe, a craft which has excited the admiration of all writers from Champlain to our own day, and which is a constant delight to all of us who know it well. A Maliseet canoe, which will carry four persons, weighs less than a hundred pounds, and draws but a few inches of water. On the shallow rivers it is used but partly loaded, and then it draws not over three or four inches, and needs a channel of less than two feet in breadth. A skilled canoe man, with a light pole of nine feet in length, can force such a craft up the swiftest of rivers, surmounting rapids and even low falls, guiding it with the greatest nicety among rocks and with exactness into the deepest places. If the water is too shallow in places for even it to float, the Indian covers its bottom with "shoes" or splints of cedar, and thus drags it unharmed over the wet stones. Finally, when the head of the river is reached, he turns it upside down over his head, allowing the middle bar, on which it exactly balances, to rest across his shoulders, and then trots off over the portage path.

The rate at which the Indians could travel upon the rivers depended upon the character of the river channel, its amount of descent, and whether smooth or broken by falls, upon the height of the water, and especially upon whether they went with or against the current. Up such a river as the Tobique they can go but twenty miles a day, though more on a spurt, but they can descend it at the rate of sixty or more miles a day. When the St. John is at freshet height, they could descend a hundred or more miles a day, but could ascend only a fraction of that distance against it. The Indian couriers employed to carry despatches between Quebec and Nova Scotia in the last century often made remarkable speed. Thus Morris, on his map of 1749, states that they passed from Chignecto to Quebec by the St. John and Ouelle in seven days, a statement almost incredible. Dénonville [1] states that they went by

[1] See later page, under Portages, 15 F.

the Rivière du Sud to Port Royal in eight days, which is easier to believe when we recall the swift current of the St. John in spring.[1]

The different rivers of the Province differ considerably in the amount of descent from their heads to the sea, and in the freedom of their channels from falls and rapids. Thus the St. John, from every point of view the most important of our ancient routes of travel, although it has a considerable descent, and hence usually a rapid current, is remarkably free from obstructions, the Grand Falls and some rapids above the Allagash being the only real impediments to continuous canoe navigation. Of the other rivers, all of those in the more level parts of the province, particularly those in the great central and eastern carboniferous area, have but little descent and have cut smooth channels from the soft sandstone rock. Such are the Kennebecasis, Petitcodiac, Washademoak, Salmon River, Oromocto, Richibucto, and the Lower Miramichi. Again, the Restigouche, though flowing in a hilly country, has not a great descent, less than 500 feet, and has cut for itself a smooth channel in the soft limestone rocks. On the other hand, the rivers of Charlotte, flowing with considerable descent over hard rocks in shallow valleys obstructed by glacial drift, have rough channels, with many rapids and falls. This is yet better marked in the south branch of Tobique, the Nepisiguit, Upsalquitch, and Little South West Miramichi, which rise in an elevated region of hard rocks, and thus have a large descent usually much obstructed by falls and rapids. In these respects the hardest of all of our rivers for navigation is the Little South West Miramichi, which falls twelve hundred feet, and has several bad falls and very numerous rapids. The Nepisiguit is also a rough river. Green River is continuously rapid, though with a few small falls, while the Madawaska is very smooth and the St. Francis is intermediate. It is plain that in selecting their routes of travel, other things being equal, the rivers of least descent and fewest obstructions would be chosen, even in preference to those somewhat shorter. For this reason, no doubt, the Restigouche has been a favourite from early times.

Another difficulty which the canoemen on all of these rivers must face is the low level to which they often fall in summer. Low water, when it cannot be avoided, is met by the Indian in the way already mentioned ; he protects the bottom of his canoe by wooden splints and drags it unhurt over the wet stones. But this method is not only slow and laborious, but there are times in exceptionally dry seasons when some of our rivers usually navigable become quite impassable. We cannot, how-

[1] John Allan, in a report of 1793, (Kidder, 307), says : "The Indians have told me, when the stream was rapid they have delivered letters to the French commanding Officer at the mouth of St. John, in four days from Quebec." In May, 1888, Messrs. A. W. and R. B. Straton, of Fredericton, ran in a birch canoe from Grand Falls to Fredericton in one day, covering the 130 miles in less than 15 hours, including all stops. *Newspaper accounts published at the time.*

ever, judge of the conditions in this respect in prehistoric times by the present, for, as a result of clearing away the forest, many of our rivers in the best settled districts no doubt fall now much below the level they maintained when their valleys were wooded. This is not only confirmed by analogy with other countries, but is illustrated by a comparison of the levels of those rivers flowing to-day from the wooded parts of the province with those in the settled districts. The former will carry abundant water, while the latter are nearly dry. There are differences in this respect, too, according as the rivers have lakes upon them, storing water, or not. Of course, the degree to which a river held its water up in summer, was an important factor in determining its value as a route of travel. It would be true also that the freshet season in spring, or occasional times in summer and autumn, would allow streams to be navigated which at ordinary times would be impassable, and probably there were portage routes used at such times which could not be ordinarily reached. When the water was low, too, the seacoasts could in some cases be made part of such a route, as from the St. John to Petitcodiac, or from near Bathurst to the St. John, via the Restigouche.

No doubt, an Indian in selecting his route of travel to a given point, where more than one offered, would average up, as a white man would do, the advantages and drawbacks of each for that particular season, taking account of the length of the routes, amount of falls and portaging, the height of the water, etc., and his decision would be a resultant of all the conditions and would be different in different seasons. It is not easy to understand why so many routes from the St. John to Quebec were in use, unless some offered advantages at one time, others at another.

Between the heads of the principal rivers were portage paths. Some of these are but a mile or two long—others longer. Some of these portages are still in use and uninfluenced by civilization. A good type is that between Nictor Lake and Nepisiguit Lake, which I have recently seen. The path is but wide enough to allow a man and canoe to pass. Where it is crossed by newly fallen trees the first passer either cuts them out, steps over them, or goes round, as may be easiest, and his example is followed by the next. In this way the exact line of the path is constantly changing, though in the main its course is kept. No doubt some of these paths are of great antiquity. Gesner states[1] that one of the most used, that between Eel River Lake and North Lake, on the route from the St. John to the Penobscot, had been used so long that the solid rocks had been worn into furrows by the tread of moccasined feet; and Kidder[2] quotes this and comments upon it as probably the most ancient evidence of mankind in New England. A somewhat similar statement is made by

[1] New Brunswick, 89.

[2] Revolutionary Operations, 80, 84.

Monro[1] as to the Misseguash—Baie Verte portage. I have seen something very similar on the old portage path around Indian Falls on the Nepisiguit, but I am inclined to think it is the hob-nailed and spiked shoes of the lumbermen which have scored these rocks, and not Indian moccasins; and it is altogether likely that this explanation will apply also to the case mentioned by Gesner, whose over-enthusiastic temperament led him into exaggerated statements. In New Brunswick the lines of regular travel seem to have followed exclusively the rivers and the portage paths between their heads, and there is no evidence whatever of former extensive trails leading from one locality to another through the woods, such as are well known to have existed in Massachusetts. The difference in the distribution and navigability of the rivers amply explain this difference. It is not, of course, to be supposed that the Indians never departed from these routes; in their hunting expeditions they undoubtedly wandered far and wide, and especially in the valleys of the smaller and navigable brooks. Moreover, they undoubtedly had portages used only on rare occasions, and also at times forced their way over between streams where there was no regular route,[2] but in general the main rivers gave them ample facilities for through travel from one part of the province to another, and they had no other method. The birch canoe was the universal vehicle of locomotion to the New Brunswick Indian; it was to him what the pony is to the Indian of the West.

The labour of crossing the portages was always severe, but the Indians took, and take, it philosophically, as they do everything that cannot be helped.[3] While canoe travel in good weather, on full and easy rivers, is altogether charming, it becomes otherwise when low water, long portages and bad weather prevail. We obtain vivid pictures of its hardships from the narratives of St. Valier, and from several of the Jesuit missionaries.[4]

Since many of the portage paths are still in use by Indians, hunters, and lumbermen, their positions are easy to identify, and many of them are marked upon the excellent maps of the Geological Survey. Many others, however, have been long disused, and have been more or less obliterated by settlement, or by roads which follow them,[5] and these are

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[1] See later page, under Portages, 7 A.

[2] In their hunting expeditions the Indians often left their canoes where the portages were long and difficult, and constructed new ones of spruce bark for temporary use on lakes. Gordon refers to spruce bark canoes (Wilderness Journeys, page 51), as does Hind (Geological Report, page 153). Other references occur in Thoreau, Maine Woods (Ed. 1864, p. 206), and in History of Houlton, p. 25, John Gyles, in his narrative (p. 20), speaks of canoes made of moose hide.

[3] Allan (117, 118), gives a good idea of this.

[4] See, for instance, Jesuit Relations, xxxvii, 245.

[5] Whites and Indians, actuated by the same motives, i. e., to find the shortest and easiest route between two river basins, would naturally run portage paths and highway roads over the same course. This was the case with the Eel River-North Lake portage and many others.

not marked upon our recent maps. I have made a special effort to determine the exact courses of these portages before they are lost for ever, and where I have been able to find them by the aid of residents, I have given them on the small maps accompanying this paper. (Maps No. 2–11.) All portages known to me are marked upon the map of New Brunswick, in the Pre-historic or Indian period accompanying this paper (Map No. 12), and their routes of travel are in red on the same map. The lines show how thoroughly intersected the province was by their routes. This map does not by any means mark all of the navigable rivers, but only those which formed parts of through routes of travel. The relative importance of the routes I have tried to represent by the breadth of the lines, the most important routes having the broadest lines.

Many of the most ancient portages had distinct names, but I have not recovered any of these. Kidder gives as the ancient Indian name of the Eel River-North Lake Portage, the name Metagmouchchesh (variously spelled by him), and I have heard that more than one was called simply "The Hunters Portage" by the Indians, possibly to distinguish the less important ones used only in hunting from those of the through routes. When Portages are spoken of at this day they are usually given the name of the place towards which they lead; thus, a person on the Tobique would refer to the portage at the head of that river as the Nepisiguit, or the Bathurst Portage, and on the Nepisiguit, he would speak of it as the Tobique Portage. This usage seems to be old, and perhaps is widespread. Thus Bishop Plessis, in his journal of 1812, speaking of the portage between Tracadie and Tabusintac Rivers (the latter leading to Negnac) says (page 169): "We reached a portage of two miles which the people of Tracadie call the Nigauck Portage, and those of Nigauck the Tracadie Portage." [1]

The situations of many of the old portages are preserved to us in place names. Thus we have *Portage Bridge*, at the head of the Misseguash; *Portage Bank*, on the Miramichi, near Boiestown (not on the maps); *Portage River*, on the Northwest Miramichi, also as a branch of the Tracadie, also west of Point Escuminac, and also south of it; *Portage Brook*, on the Nepisiguit, leading to the Upsalquitch; *Portage Lake*, between Long and Serpentine Lakes; *Portage Station*, on the Intercolonial Railway. Kingston Creek, at the mouth of the Belleisle, was formerly called *Portage Creek*. *Anagance* is the Maliseet word for Portage; and *Wagan* and *Wagansis*, on the Restigouche and Grand River, are

[1] Probably *Cumberland Bay*, on Grand Lake, is another case, as it was on an old route to Cumberland. This same bay is called on the DeMeulles-Franquelin map of 1686 Pichkotkouet, which seems like a form of the Indian name for the Petitcodiac. Again, on Lake Metapedia, is a river called the *Matane*, from which, I believe, there was a portage to the Matane. Yet another example may be the name *Nipisigouichich*, "Little Nepisiguit," applied on the DeMeulles-Franquelin map to the Nictor branch of the Tobique, which does lead to the Nepisiguit.

the Micmac for Portage, and a diminutive of it. Portage Island has probably a different origin, as I have elsewhere shown.[1] The word Portage, as applied to a road, however, by no means implies that there was formerly a portage path in that vicinity; for it has been adopted by lumbermen, and is applied by them to the roads over which they haul their supplies to the lumber camps, and in this sense it occurs several times upon our best maps, and is thus used in some books. Moreover, the first roads built by the whites between rivers were called Portages; thus we have the Avery portage from Nashwaak to the Miramichi, and the Brown portage, from Shikatehawk to Miramichi.

Very important testimony upon the location of ancient portage-routes is given us not only in the works of Champlain, Lescarbot, Denys and others, but especially by the, (for its time) very fine map of Franquelin-DeMeulles of 1686, reproduced in the preceding monograph of this series, page 364.[2] In many cases, it shows portage-routes by connecting the rivers by a continuous line, as may readily be seen by comparing it with a modern map, or with Map. No. 12 in this paper.

The most important of the Indian routes of travel were along the sea-coasts and along the St. John River, and the latter was even more important than the former. I shall accordingly treat it first in detail, and then pass to consider its communication through its branches with the important inhabited basins, the Passamaquoddy, Penobscot, Petitcodiac, Miramichi, Restigouche, St. Lawrence, at the same time considering the communication of these basins with one another. I have tried to make the following list complete, and think I have missed very few, if any, of the portage routes.

The remarkable ease of communication of the St. John River with the other rivers has attracted attention of every writer from Champlain, Lescarbot and Denys down to those of the present day. It is really a most remarkable fact about this river, that, stretching away through the centre of the great New Brunswick-Maine peninsula as it does, it should send navigable branches into such close and easy communication with every other river system in that peninsula.[3]

1. *Along the St. John.*

Of all Indian routes of travel in what is now the Province of New Brunswick, the most important by far was that along the River St. John. This river was, and is, an ideal stream for canoe navigation. It not only has easy communication with every other river system in this and the neigh-

[1] Place Nomenclature, page 263.

[2] Unfortunately the Ottawa copy of this important map, from which the cut in my monograph was made, is full of errors and omits many names, as proven by a copy recently corrected for me by careful comparison with the original in Paris.

[3] The physiographic explanation of the fact is, however, plain. It depends upon past changes in our river-systems, by which certain rivers have robbed the water from the heads of others; the portage paths follow parts of ancient valleys.

bouring provinces, but it is in itself very easy to travel. Through most of its course the water is never too low for good canoe navigation, and it has few rapids and but a single great fall.

The St. John rises in Maine and its head waters interlock with those of the Penobscot, and with the Etchemin flowing into the St. Lawrence near Quebec. A good description of its entire course is given in Bailey's "St. John River." Its upper course is easy of navigation, consisting of long deadwaters broken by short stretches of rapids. From Seven Islands to the Allagash it is more rapid and its bed more rocky, and it passes several bad rapids. Below the Allagash to Edmundston it is swift and with some rapids, but none which are dangerous, nor difficult to surmount. From Edmundston to Grand Falls the current is gentle, and there are many quiet stretches. At Grand Falls it drops in all one hundred and fifty feet. The old portage is across the neck on the west side; its course is now mostly obliterated by the buildings of the village, but its exact original course is shown on the original survey plan of the town of Colebrooke (former name of the village). The Grand Falls portage, now often spoken of, is simply the road from Aroostook to the Falls. From the Falls to Tobique the river is very swift, and broken by some rapids requiring careful navigation; and from Tobique to Woodstock its course is everywhere swift, but without rapids of any account. From Woodstock to Springhill, above Fredericton, the current is mostly swift, and there is one bad rapid, the Meductic Falls, but there are many quiet reaches and some deadwater. From Springhill to the mouth the tide flows. On the lower part of the river are a few local portages. An old plan marks a portage across the neck at Gagetown, where the canal now is. Another places one between the Upper Keyhole on Grand Lake, and Maquapit Lake, a distance of somewhat less than two miles. Another, of much importance in shortening distance on the lower river, was a much travelled path from Portage (now Kingston) Creek near the mouth of the Belleisle across to Kennebecasis, and a road was early made through here and used in the last century in travelling with teams on the ice from St. John to Fredericton. The Portage is marked on the Morris map of 1765, and others, and the road is on R. Campbell's of 1788. At the mouth of the river are the Falls, passable for canoes but for a few minutes on each tide at slack water, and to avoid these there was a portage path across the narrowest part of the neck from Marble Cove to nearly opposite Navy Island. This portage is shown, though crudely, on Champlain's map of the harbour of 1604, and in detail on Bruce's fine map of the harbour of 1761, which shows also a portage from Mill Cove on the Harbour across to the Marsh Creek by the route now followed by the Intercolonial Railway, and another across Green Head, where the canal now is. On Wilkinson's map Drury Cove on the Kennebecasis is marked "Portage," which no doubt marks a much used portage to the Marsh Creek, and a route thence to Courtenay Bay.

2. *St. John—Passamaquoddy.*

A.—Along the Sea-coast. By this natural and easy route the Indians still travel in summer in their birch canoes. Though the coast is bold, harbours are very frequent, and hence danger from storms slight. At Point Lepreau the eddies are dangerous, and to avoid them there was used a path from

Indian Cove just to the west of the point, where there is still a camping-ground, across to the beach half way between Duck Cove and the Point.[1] I have also been told by old residents that there were formerly paths or trails from near the bridge on Lepreau Basin over to the head of Dipper Harbor, a distance of less than two miles. These were possibly former portages. There is a very shallow valley from the head of Lepreau Basin over to a deadwater on Moose Creek about a mile away, whence the descent is easy into Little Dipper Harbor, but I cannot find that any portage path went through this way. Near Point Lepreau on early French maps is a *Havre du Portage*, which on English maps is *Carriage Harbor* (see my Place-Nomenclature, page 225). On an old plan of before 1784 the name is applied to Dipper Harbor, while on Wright's fine map of 1772 it is given to the first cove east of the point. Doubtless the name refers to the use of the cove as part of the portage route.

B.—South Oromocto-Lepreau. This was no doubt an unimportant route used only by hunting parties, never as a through route. It is known to me only by its presence on Mahood's survey map of 1837, where it occurs as "Indian Portage, distance about 2½ miles," running from Tomoowa or Cranberry Lake to the southern end of South Oromocto Lake.[2] The south branch of Oromocto is hard to navigate because of its low water, and the Lepreau because of its incessant heavy rapids and falls.

C.—Oromocto-Magaguadavic. This route seems to have been considerably used. It is mentioned on the Morris map of 1784 and elsewhere, and is shown clearly in the Field-book of the Hedden and Campbell survey of 1796-1797. As there marked, it runs from just above the Stones Brook of the modern maps to near the southern end of the lake, and is stated to be three miles long. The Oromocto is fairly easy of navigation, except for its low water, but the Magaguadavic is much broken by rapids and falls. According to M. H. Perley, it was by this route in 1761 an exploring party led by Israel Perley reached the St. John from Machias. Over this route, too, went Captain West with a party in 1777, retreating from the St. John. (Kidder, 111, 113). In Allan's map of 1786 the portage route from Magaguadavic to Oromocto clearly runs up the Piskahegan and through two small lakes, (Peltoma and Little Lakes,) but I have no other information about such a route. This would be a shorter route between the mouths of the two rivers.

From the Magaguadavic there was a portage to the St. Croix. It is marked as "Portage said by Indians to lead to the Cheputnaticook" in the Hedden and Campbell Field-book of 1796-1797. It starts from Cranberry Brook on Lake Magaguadavic and probably ran to the Second Lake of the Little Digdeguash chain over a very rough but not hilly country. It is mentioned also by Allan in 1793 (Kidder, 306), and by Gesner in his Fourth Report on the Geology of N. B., 40.

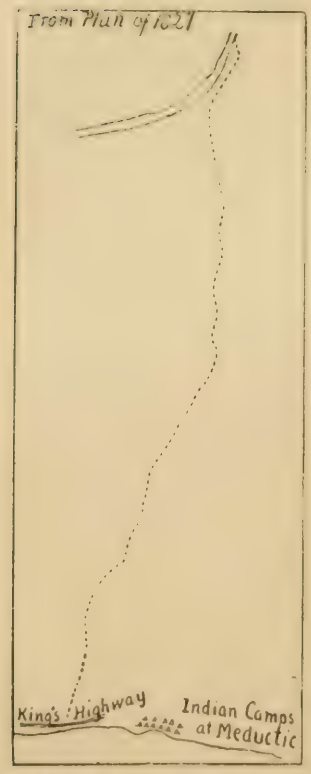
There was another portage of some importance from the Magaguadavic to the Letang, from near the south-eastern extremity of Lake Utopia. It is described by John Mitchel in his Ms. Field Book (now in the library of the Maine Historical Society) of his survey of Passamaquoddy in 1764, as follows:—"The depth of Sd. Cove (i. e. that at the south eastern extremity

1 As I have been told by Mr. Thomas, keeper of the Lighthouse, and have myself seen.

2 It is shown in part on a map in Bulletin of the Natural History Society of New Brunswick, No. XVI., page 59.

of Lake Utopia, called by him the 'Pond') is 360 Rods about 300 Rods Up Sd. Cove there is an Indian Carrying place which goes a Cross to the Salt Watter these are the Courses of Sd. Carrying place, viz: N. 30, W. 50 Rods; N. 40 Rods; N. 37, W. 50 Rods these Courses is tacken from the Salt watter and Runn towards the pond." The portage is marked on the Hedden and Campbell map of 1797 and on several plans. One can easily see where it started near the end of the cove and went over the lowest part of the ridge, entirely in what is now open fields.

The portage around the falls at St. George was a short distance to the eastward across the narrowest part of the neck. It is marked on the Hedden-Campbell map and mentioned by Captain Owen in his Journal of 1771, though he gives it far too great a distance from the falls.



MAP No. 2. THE MEDUCTIC-EEL RIVER PORTAGE. From a plan of 1827; × ½.

Purdy's map of 1814 marks a portage from the Magaguadavic to the Piskahegan, but this is no doubt an error, and meant to lead to the Oromocto.

D.—Pokiok-Magaguadavic. Probably not much used. The Hedden and Campbell Field-book gives from Mud Lake a "Portage to R. Pekuyauk" and the portages between Little Magaguadavic and Mud Lakes are fully shown on their map. A plan of 1827 marks a direct path from Little Magaguadavic Lake to Lake George, and reads, "Indian Road to Lake George, 3 miles," which must mean 8 miles. This portage is also mentioned by Ward (p. 63).

E.—Eel River-Chiputneticook. This was one of the most used and important of all the ancient Indian routes of travel in this part of America, for it not only formed the chief route from the St. John to Passamaquoddy, but as well was part of the great route to the Penobscot.

This route from the St. John to the Scoodic Lakes in Maine is fully described[1] in the Journal of Colonel John Allan, who passed over it in 1777 with a large company of Indians, and passed by the Scoodic to Machias. He gives as the Indian name of the Eel River—North Lake portage, Metagmouchschesh. It is shown on Allan's map of 1786, on Bouchette, 1815, and on many others since then, and also on an Indian Map of 1798.[2] It was by this route John Gyles was brought to New Brunswick in 1689, but his account of it is very brief in his narrative. There is some account of it in Bangor Historical Magazine, 1892, 159.

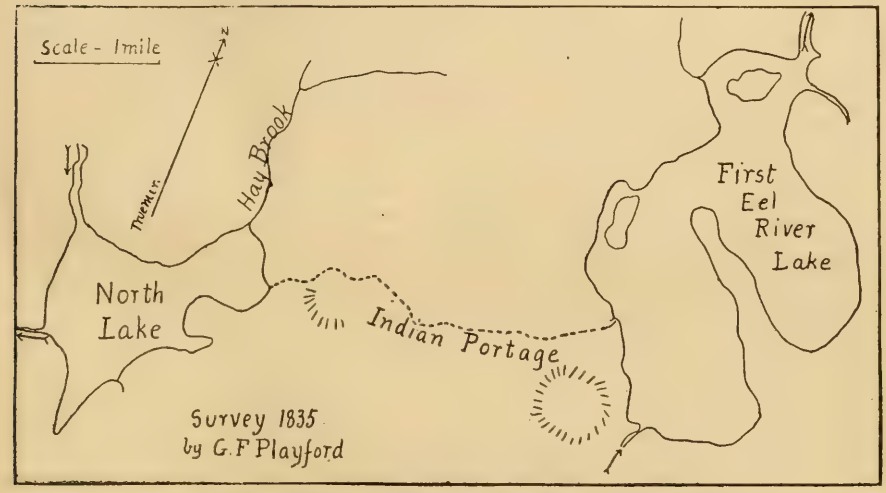
The lower part of Eel River, below the present village of Benton, is unnavigable for canoes because of falls and rapids, which were avoided by the

[1] In Kidder's "Revolutionary Operations," pp. 117-123.

[2] In the Library of the Maine Historical Society. Reproduced in Magazine of American History, XXVI., 261.

Meductic Portage. This started at Meductic Flat and went through the Gully a short distance below Meductic Fort and Village, and ran to near Benton in a course not very different from the present highway, generally somewhat north of it. An old plan of it is given herewith (Map No. 2, also No. 5). This Portage is also mentioned by John Gyles in his narrative of 1689.

Above Benton the river is very easily navigable, consisting of deadwaters separated by short rapids or falls to the First Lake. Thence the portage, about three miles long, runs somewhat to the south of and not far from the course of the present highway across to North Lake. Its direction is well shown on the accompanying map (Map No. 3, also No. 5). It is of this portage that



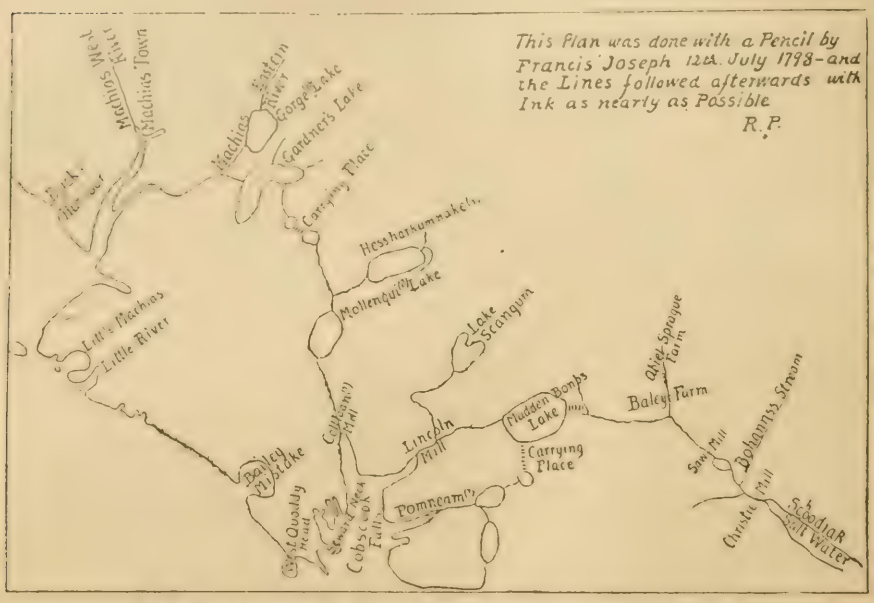
MAP NO. 3. THE EEL RIVER-CHIPUTNETICOOK PORTAGE, From a plan of 1835; × $\frac{2}{7}$.

Gesner said the solid granite rocks were hollowed by the wear of ages of moccasined feet, a statement I doubt (see earlier, page 236). North Lake empties by a thoroughfare into Grand Lake, whence starts the portage to the Penobscot, later to be described (see below 3 A). In passing from Grand to Chepneck lake a portage is necessary to avoid the falls, and this runs from Mud Lake, below Forest City, across the neck (map No. 5). It is mentioned by Allan. The St. Croix is rather difficult of navigation to the bay; it is much broken by falls and rapids interspersed between considerable deadwaters. From the Scoodic Lakes there is a portage to the Machias (see below) and another to the Penobscot (3 B).

In the route down the St. Croix to Cobscook Bay there was a portage to Meddybemps Lake, and thence the route lay down the Denys River. This portage is clearly shown on a plan drawn by Francis Joseph, an Indian, and now in possession of the Maine Historical Society, a copy of which is given herewith (Map No. 4). The portage probably started from the stream Wapsednegan (so given in Colby's Atlas of Washington Co., Maine). The Indian map shows also a portage to Round Lake, whence a stream leads to the present Pennamaquam, on which is now the town of Pembroke. It

is no doubt the Meddybemps Lake and Stream, known through its use as a portage route, which is shown on D'Anville's fine map of 1755; and with the portage made a stream, as is not uncommon on early maps, it is shown also on the Green-Jefferys map of the same year.

From the Scoodic Lakes there was a portage to the head of the Machias River. The route is mentioned by Allan, who traversed it with much difficulty in 1777, is on his map of 1786, is shown fully on Kidder's map in his "Revolutionary Operations," and it is clearly shown on a map in Colby's Atlas of Washington County. It ran from near the eastern end of the lower Scoodic Lake to Pokomoonshine Lake at the head of the Machias.



MAP NO. 4. THE ST. CROIX-COBSCOOK-MACHIAS PORTAGES.
From a map by an Indian in the Library of the Maine Historical Society; × ¼.

From Cobscook Bay to the Machias there was a route through the Lakes in the township of Whiting. It is very clearly shown on the Francis Joseph map of 1798 herewith given (Map No. 4).

3. *Passamaquoddy-Penobscot.*

A. **Grand Lake-Baskahegan.** This was a part of the greatly-used route from the St. John to the Penobscot via Eel River (2 E). Its course, as given me by two residents, is shown on the accompanying map No. 5, and it is described by one of them,[1] who knows it thoroughly, as follows: It left Grand Lake at Davenport's cove and ran south west over a considerable hill two and a half miles to Cleaves Landing on the Baskahegan, a mile below the present railway bridge and village. The Baskahegan is easy of navigation in

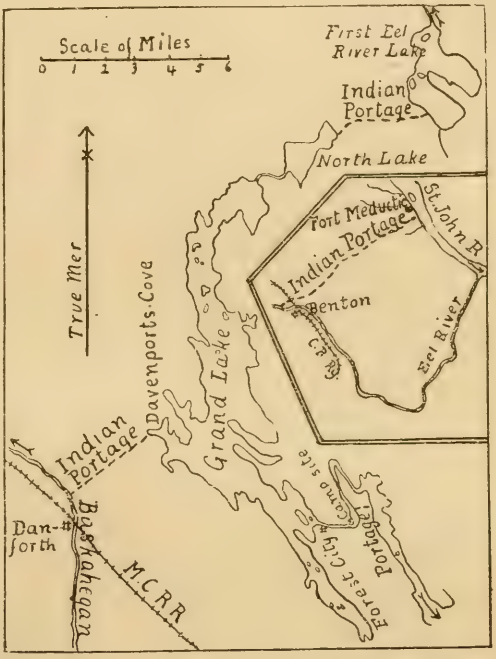
[1] Mr. D. Gilpatrick, of Danforth, Me.

summer for a canoe. The route is also marked correctly on the map in Kidder's "Revolutionary Operations," and also on an Indian map of 1798.[1] This route was accurately known at least as early as 1764, for it is mentioned in instructions given that year by Governor Bernard of Massachusetts, to Surveyor John Mitchel.

It was by this route many of the early settlers of Houlton came from Maine, as related in the Histories of Houlton.

On Wilkinson's map a portage is marked from Baskahegan Lake directly to Pleasant Lake of the Scoodic chain. It is also on Allan's map of 1786.

B.—Scoodic-Passadumkeag. The portage is clearly shown on Wilkinson's map of 1859. It appeared on Allan's map of 1786, on Bouchette's of 1815, and others. I have no reference to its use, but no doubt such may be found in works on Maine. In Featherstonhaugh and Mudge's Report (p. 21) this portage is said to form part of the old Indian route from Quebec to Passamaquoddy, passing up the Chaudiere and the Penobscot and down this river to the Passamaquoddy, and they state this route was known to Temple in 1668 (p. 22).



MAP NO. 5. PORTAGES FROM THE ST. JOHN TO THE PENOBSCOT VIA THE BASKAHEGAN.

4. *St. John-Penobscot.*

A. Eel River - Chiputneticook-Baskahegan. This route, by far the most important between the two river systems, has already been described above under 2 E and 3 A.

B.—Aroostook—East Branch. This route ran through the Milnoket lakes to the East Branch of Penobscot. It is marked on Hubbard. The Aroostook is very easy of navigation.

C.—Allagash—Chesuncook. A much travelled and often described route; marked on Wilkinson, and marked and described by Hubbard. It formed also a part of a route from the St. John to the Kennebec. There are other routes between the Allagash and Penobscot, all of which are so fully treated by Hubbard, and so much out of the geographical limits of the present paper that no further reference is needed to them here. A modern route of an unusual kind is a canal between Telos Lake on the Allagash and Webster Pond on the Penobscot.

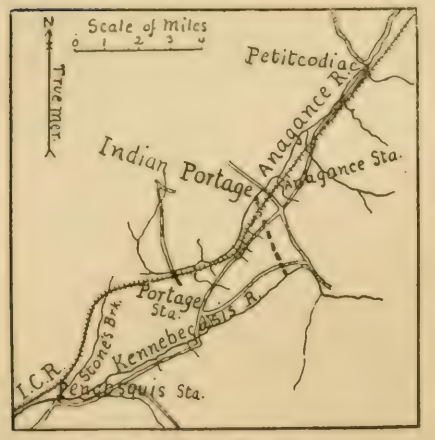
[1] In Magazine of American History, XXVI., 264.

D.—Baker Lake—North-East Branch Penobscot. Marked on Hubbard and Wilkinson. Between Moonsungan on Aroostook and Spider Lake on Allagash was an important route, marked on Wilkinson and Hubbard. This was no doubt the main route from the St. John to the West Branch of Penobscot, and thence to the Kennebec.

Between the Little Machias and Upper Eagle Lake of the Eagle Lake chain was a portage, given by Wilkinson. The various portages between the Eagle Lakes and the St. John are all on Wilkinson's map.

5. *St. John-Petitcodiac.*

A.—Along the Sea-Coast. No doubt this route was often used, though I find no reference to it. The mouths of the streams offer good landing places for canoes, but most of the coast is very bold, and most dangerous in storms. For this reason it is likely that the Anagance route, next to be mentioned, was oftener used as a through route.



MAP NO. 6. THE KENNEBECASIS-PETITCODIAC PORTAGE.

To avoid Cape Enrage, there was a portage from Salisbury Bay into Germantown Lake, and thence down the Shepody River. The course of the portage, as given me by a resident,[1] was from Waterside north by the route followed by the highway and present railroad to the lake.

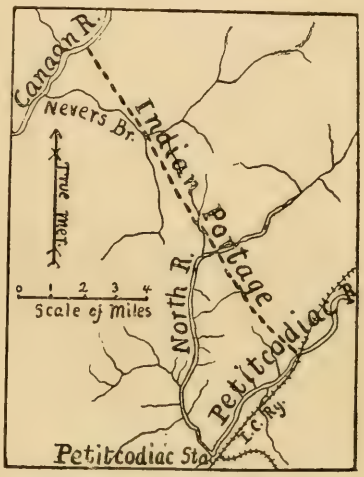
B.—Kennebecasis-Anagance. This was an easy and much-used route, and a part of the regular route to Nova Scotia. Morris, on his map of 1784, says of it: "By Portage from this River to the R. Petitecodiack the Indians of New Brunswick have communication with the Indians of the Peninsula of Nova Scotia." The Kennebecasis has a very gentle current to the portage, and the Anagance (from the Maliseet *Oo-ne-gunce*, a portage) is nearly a dead-water stream to the Petitcodiac, which is easily navigable to its mouth. The exact route of the portage, as given me by a resident,[2] is shown on map No. 6. It leaves the Anagance River one-half a mile west of Anagance Station, and runs directly southwest to the Kennebecasis, distance two miles. This portage was made the starting point for a county line in 1787. It is mentioned in a report by D. Campbell in 1803, who calls it an Indian portage long established, and says that it was formerly the route of communication between Fort Beausejour and the Acadian settlements on the River St. John.

C.—Washademoak-Petitcodiac. This was a route much used in travel from the Beauséjour (or Cumberland) region to Quebec. The Washademoak, or Canaan, River is fairly easy of navigation to the portage. Since the North

[1] Mr. J. G. Barbor, of Cape Enrage.
[2] Mr. G. H. Davidson, of Anagance.

River, the continuation of the Petitcodiac, is not navigable, the portage path crossed from the Washademoak, about two miles above Nevers Brook, to the main Petitcodiac, which it reached about five miles below Petitcodiac Station. It was hence about twelve miles long, one of the longest of the important portages in the Province. Its route, as given by a resident,[1] is shown on the accompanying Map No. 7. I presume its course is only approximate; indeed, I have been told by an Indian chief that it started off near Salisbury—considerably farther down the river.

Upon Bellin's maps of 1755 and 1757 this portage is shown, though erroneously marked as ending at the River Chiaministi (Salmon River), and it is called "Portage a beau Soleil." The reason for this name is given by Captain Pote in his most valuable Journal. He crossed this portage in 1745, on the way from Beaubassin to Quebec, and says of it[2]: "This Day whent up a River about 6 Leagues To a Carrying place . . . and Stopped at a mans house, Named bon Soliel, this man Treated me, with much Cevility . . . and acquainted me that his house, was ye Last french house I Should meet with, Till I arrived to ye River of Saint Johns." In his "bon Soliel" we recognize a corruption of Beausoleil, a well-known Acadian name. Pote states that the portage was eight leagues long. Curiously, he calls the Washademoak the Petcochack. He describes fully his route to the St. John. This portage is also referred to in a document of 1756 given by Rameau de Saint Pere[3]: "Remonté ladite rivière [i. e., the Petitcodiac] environ deux lieues, fait ensuite le portage nommé Ouaigesmock, aussi de six lieues, jusqu'à une autre rivière qui doit être celle de Chiamaristi." Ouaigesmock is no doubt Washademoak. This portage is also marked on Montresor's map of 1768, and is correctly made to empty into the Jedemweight (Washademoak). The lake there shown one league from the Petitcodiac is no doubt the crossing of the North River. It is also marked on Morris of 1749, Mitchell of 1755, Bonnor of 1820, Baillie and Kendall of 1832.



MAP NO. 7. THE PETITCODIAC-WASHADEMOAK PORTAGE.

The ending of the portage on Bellin at Salmon River instead of at the Washademoak is perhaps to be explained by the presence of a former portage from the Washademoak to Cumberland Bay, on Grand Lake. In this case but a small distance would have been travelled on the Washademoak River before leaving it for the path to Grand Lake. The route of this portage, as given me by a resident[4] is from three miles northeast of Coles Island straight through to Cumberland Creek, four miles from the bay.

[1] Mr. J. Lounsberry, of Lewis Mountain.

[2] Journal of Captain William Pote, Jr., p. 52.

[3] Une Colonie feodale, II., 373. This interesting document is given in full in one of Parkman's Ms. volumes on Acadia in the Library of the Massachusetts Historical Society.

[4] Mr. John Moser, of Canaan Forks.

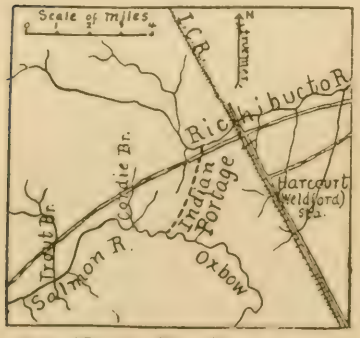
In connection with the presence of a former portage route here is the interesting fact that the name given on the fine DeMeulles-Franquelin map of 1686 to the river emptying into Cumberland Bay, Grand Lake, is *Pichkotkouet*, which suggests *Pet-koat-kwee-ak*, the Indian name of Petitcodiac. The name *Cumberland Bay* itself is curious, and may mean that both the Indian and English names were suggested by the use of these waters as a part of a portage route to Petitcodiac and Cumberland Bay at the head of the Bay of Fundy. It was through this region the New Englanders went to attack Fort Cumberland in 1776, and perhaps a portage path then cut is the "road made from St. John's River to Chepody, by the rebel army from New England" and referred to by Murdoch.[1]

A portage from the head of the Washademoak to the Cocagne is mentioned below.

A portage of three leagues from Memramcook to Westcock is mentioned in the Parkman MS. (New France, I., 243). As shown on early maps it followed the present Frosty Hollow Brook. It is known locally as an Indian portage, and is said by the Indians to have been used by them.

6. *St. John-Richibucto.*

A.—Salmon River-Richibucto. This was a very important and much travelled route. The navigation of Salmon River is extremely easy, and it flows nearly throughout its course with a very gentle current; the portage, less than three miles long, is over level ground; and the Richibucto is mostly easy travelling for canoes. The portage, as given me by a resident,[2] is shown on the accompanying map No. 8. It is marked on Baillie and Kendall's map of 1832. The Jesuit Relation of 1659 has "Regibouctou est une belle riviere considerable pour le commerce qu'elle a avec les sauvages de la riviere S. John." Denys, 1672, clearly refers to the portage, and it was made the boundary of D'Amours Seigniory in 1684. It is also shown by a continuous line on the Franquelin-DeMeulles map of 1686.



MAP NO. 8. THE RICHIBUCTO-SALMON RIVER PORTAGE.

B.—Washademoak-Buctouche. I have been told by an Indian chief that there is a portage here 2 or 3 miles long over which he has been, but it seems to be unknown to the white residents.

7. *Petitcodiac-Richibucto.*

A.—Misseguash-Baie Verte. This was a route of great importance, much used by both Indians and French, and often referred to in early documents. Thus Franquet describes it fully in his Report of 1752. He shows that the common route was from Baie Verte to Portage Hill by a path, thence to Pont à Buot by canoes, thence to Fort Beauséjour by road. The Misseguash is

1 Nova Scotia, II., 576.

2 Mr. S. M. Dunn of Harcourt.

tidal to above Point de Bute, to which point it meanders as a fresh-water stream through lakes and bogs from its source above the present Portage Bridge. Alexander Monro, who knew this region thoroughly as surveyor, and somewhat as antiquarian, says:[1] "Within the present century the Missiguash River and chain of lakes at its head were navigable for boats from Cumberland Basin. Within the last fifty years Indian canoes in large numbers followed this route to within three miles of the navigable waters of Baie Verte. This route has ceased to be navigable for canoes." That the route has ceased to be navigable is the general opinion, but after seeing the river at several points, I am of opinion that an Indian could still take a canoe over the entire course by cutting away bushes in places, as he has to do on other portage streams, and that it is not more difficult of navigation than many streams which they still traverse. At Portage Bridge the river ceases to be navigable; and at the bridge, all testimony agrees, the portage path to Baie Verte started, going over the hill still called Portage Hill. After the road to Baie Verte was built by the French, it was, of course, used as the portage path, and its location is discussed later. (See also Map No. 24). As to the precise course of the ancient Indian trail, however, I have not been able to gather satisfactory evidence. On this point tradition is altogether untrustworthy, since the path must have been disused for nearly a hundred and fifty years, and can so easily be confounded with the old French road. On the one hand, from a study of the topography of the region we would expect it to follow the valley of the Misseguash to its very head, and thence to cross the low ridge to the head of the Verte River. This would enable the Indians to use both streams to some extent at high water, and would make the shortest and apparently easiest path. This is confirmed by the very detailed map of this entire route by Franquet of 1752 (Map No. 26), in which we are led by its author's accuracy in other respects to place much confidence. The stream heading very closly with Portage Hill can only be the Verte River, while the numerous bridges which cross it can only be supposed to be those on the portage path used when the water was too low for navigation, as it usually is in this stream. Franquet speaks of crossing eight bridges on the route. On the other hand, Mr. Monro states in another article[2] that the Indian path via Portage Hill is now known as Baie Verte Road. Speaking of this portage, Mr. Shewen says in his "Notes of Fort Monckton," "Traces of that portage were seen near the head of the river, many years ago, by Mr. Munro, the veteran Crown Land Surveyor and Civil Engineer, who describes it as being about ten feet wide, and hollowed to trough shape by wear." It is quite possible that a direct path was made from Portage Hill some three to four miles along the highland, which afterwards was followed by the French road, and later by the present highway. But such a supposition does not accord with Franquet's map. De Meulles, in 1685, speaks of this portage as a league in length (Rameau, I., 173), and suggests a canal across it, the first suggestion of a subject which has been much discussed in this century.

It is possible that this is the route referred to by Champlain as that by which the natives pass into the Bay of Fundy, in which case the Verte River would be his Souricoua (see below, B.), but it is much more probable that the latter was some river near Pictou.

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1 Bulletin of the Natural History Society of New Brunswick, No. V., 23.

2 Newspaper articles in the "Chignecto Post," in 1883.

It is stated by Monro in his article last-mentioned, that the route finally selected for a ship canal across the isthmus is in the vicinity of an old Indian trail ; there would thus have been a portage route from near Hackmatack Lake, on the Misseguash, through to Tidnish, near its north branch.

It is said by the Indians there was formerly a route from their camp ground near Midgic through to the Aboushagan, which perhaps indicates an old portage route from the head of the Tantramar, (a stream flowing through bogs much as the Missiguash does,) through to the Aboushagan river ; but I have no further information about it.

B.—Memramcook-Scadouc. It is said by the Indians there was a portage of three or four miles in length between these rivers. A stream at the head of the former river is on some maps called *Indian Stream*, which shows, no doubt, where the route left the Memramcook. A route for a canal was surveyed through here in 1842. Ordinarily the Memramcook is navigable for canoes to Calhoun's Mills and the Scadouc to Smith's Mills, leaving an interval of some eight miles, which would be greatly reduced in times of high water.

It has been supposed by Laverdière and by Slafter, in their editions of Champlain, that the river Scadouc, or else the Shediac, was that called *Souricoua* by Champlain in his 1603 narrative, and said by him to form a route to the Bay of Fundy. This, however, is extremely unlikely, for Champlain on his map of 1632 marks a "Riviere par où l'on va à la Baye Françoise," which is doubtless his Souricoua, and makes it head with Minas Basin, from which we must infer that it was one of the rivers near Pictou. Moreover, Champlain himself, in speaking of the Souricoua, states that at the entrance is found an island about a league out to sea, which by no means fits the Scadouc, but does fit perfectly the rivers at Pictou. Further, he states that they go up that river two or three days and then cross two or three leagues of land, which account fits far better a river at Pictou than the very small Scadouc. I have not been able to settle the point by the testimony of the Micmac names of the rivers near Pictou.

C.—Petitcodiac-Shediac. The only reference to this portage known to me is in a document of 1756 given by Rameau de St. Père,[1] which reads : "De Chedaïque à la rivière Pécoudiak, c'est un portage de six lieues et beau chemin." It is marked on Montresor's map of 1768, and stated to be six leagues in length.

Between the different rivers of the Richibucto System (i. e., from Escuminac to Tormentine) there was a very easy route along the sea-coast. The low sandy shores everywhere make landing from canoes easy and safe, while an occasional portage over narrow necks of sand allows long stretches to be made through lagoons and inside sandy islands. It was along this route that Gamaliel Smethurst travelled in 1761 from Bathurst to Bay Verte, and his "Narrative" gives a vivid picture of some of the difficulties of such travel.

D.—Shemogue-Baie Verte. A portage from the head of tide on Shemogue to Bay Verte is mentioned as part of a regular route in the Parkman MS. (New France, I., 265).

Smethurst in 1767 was taken across country from near Shemogue to Bay Verte. A six-mile portage would pass over a level country, and cut off a long distance around Cape Tormentine.

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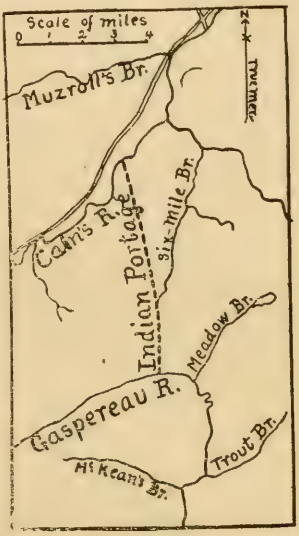
[1] Une Colonie féodale, II., 373.

8. *St. John-Miramichi.*

A.—Gaspereau-Cains River. This was a route of considerable importance. Its exact course as given me by a resident[1] is shown on the accompanying map No. 9. Both Gaspereau and Cains River, like others in the Carboniferous area of New Brunswick, are easy of navigation because of their slight fall and smoothness of current. The portage, six miles long, passes over a nearly level country. The route is mentioned by Benjamin Marston (who travelled over it) in his valuable MS. Diary of 1785[2]; is marked imperfectly on Purdy's map of 1815, Bouchette of 1815, Bonnor of 1820, Baillie and Kendall of 1832, and elsewhere. This is no doubt the portage between Salmon River and Miramichi mentioned in the "Notitia of New Brunswick," page 110.

Possibly there was some route from Cains River or Black Brook to Barnabys River, for the name of a branch of the latter, Semiwagan, is in Micmac *Say-moo-wak-un-uk*, strongly suggestive of *o-wok-un*, "a portage." This is strongly confirmed by the Franquelin-DeMeulles map of 1686, the original of which in Paris[3] shows a continuous line between what is apparently the Little Semiwagan and Black Brook. An apparent portage route on this map in the angle between the Renous, Main South-west and Little South-west Miramichi, I am unable to locate.



MAP NO. 9. THE GASPEREAU-CAINS RIVER PORTAGE.

B.—Nashwaak-South-west Miramichi. This was a long but very important portage running from near Cross Creek to above Boiestown. As mapped and described for me by a resident,[4] it started about a mile north of Nashwaak Bridge Post office, followed Cross Creek to about Budagan Brook, thence followed the course of the present railroad to beyond the Clearwater, whence it followed the course of the present highway road to within two miles of Boiestown, whence it turned directly to the river, reaching it at Portage Bank, two miles above Boiestown. This is no doubt the course of the first Portage road, which in the main must have followed the Indian trail; though probably in high water the Indian route went up Cross Creek as far as Budagan Brook, and thence possibly into the Taxis. The name Budagan (on the Geological, not on Loggie's map) suggests a connection with the Micmac *ok-un*, part of *o-wok-un*, a portage, which is strengthened by its occurrence on another portage route, the Napudogan (8 C).

This route is shown imperfectly on Purdy's map of 1814, on Bouchette, 1815, Bonnor, 1820, and on Baillie & Kendall of 1832, who give its length as

1 Mr. Isaac Burpee, of Gaspereau.
2 In possession of Rev. W. O. Raymond.
See earlier, page 239.
4 Mr. John Hayes, of Hayesville.

twenty miles. As this was the natural route from Fredericton to the settlements on the Miramichi, a road was built between the two rivers soon after the Province was founded, and an attempt was made to settle disbanded soldiers along it, with but indifferent success. The Nashwaak is easily navigable to the portage, as is the Miramichi.

C.—Napudogan-Miramichi Lake. A portage of three miles connected these waters. It is no doubt the route referred to by Morris on his map of 1784 as "only three miles portage between the head of this river and the southwestern branch of the River Miramichi." Munro in his report of 1783 also refers to it, though obscurely. It is marked on Baillie and Kendall, 1832, and is mentioned in Baillie's "New Brunswick." On Bouchette, 1831, this and the preceding are confounded. It is referred to also in Vivian's "Wanderings in Western Land" (page 67).

Munro refers obscurely to a portage between the Nashwaak and the Keswick, but I know nothing of such a portage. There may, however, have been a portage from the Becaguimec to the Nacawicac, for where the waters approach very near to one another, the branch of the former is called Indian Brook and Lake.

D.—Shikatehawk-Miramichi. This route involved a long portage, some fifteen miles. Its course as given me by a resident[1] is as follows: From the St. John River it followed the valley of the Little Shikatehawk, an unnavigable stream, to about the present Gordonville, whence it followed about the course of the present highway road, which crosses it several times, through Glassville, Highland and Argyle to Foreston, 15 miles from the mouth of the Little Shikatehawk. From Foreston the South Branch of the Miramichi is navigable to the main river, about fifteen miles. This was, and is, the shortest and easiest route between the two rivers.[2] This is marked as an "Indian Portage" on Purdy, 1814, and it is also on Bouchette of 1815, and on Baillie & Kendall of 1832; and it is mentioned by Cooney.

The same resident tells me there is an old portage road from the Odell to the Falls on the North Branch Miramichi, 17 miles above the Forks, and that from the head of the Deadwater on the Miramichi to the Wapskehegan are numerous portage roads used by lumbermen. I have no information as to whether there was an ancient Indian route through here, but it is extremely probable there was a route used by hunting parties.

E.—Long Lake (Tobique) to Little Southwest Miramichi Lake. This was a little-used portage of some eight miles, fully described by Hind, in his Geological Report (page 152). Both lakes are very difficult to reach, however, on account of the very numerous falls and rapids on the streams leading from them, and hence this was probably never a through route, but only a hunter's route; indeed it is called by the Indians, "The Hunter's portage." It must have been well-known to DeMeulles, for on the fine DeMeulles-Franquelin map of 1686, the lakes are shown with fair accuracy in about their proper relative positions, far better indeed than upon any other map for over a hundred and fifty years. This portage is referred to obscurely by Munro in his Report of 1783, and it is obscurely marked upon Bouchette's map of 1831.

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[1] Mr. John Miller of Glassville.

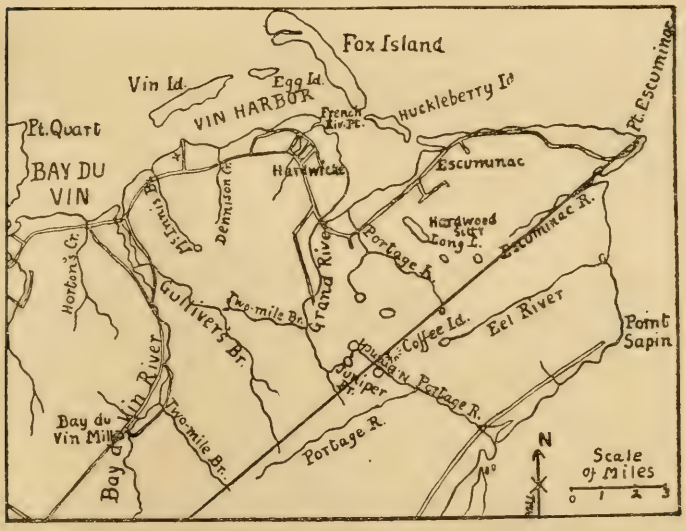
[2] In tracing this route on a modern map, that of the Geological Survey should be used, as the roads are incorrectly laid down on Loggie's Map.

Long Lake is but one of several at the head of the southern branch of Tobique, all of which are connected with one another by portages shown fully on the map of the Geological Survey, and described by Hind and, in part, by Gordon.

9. Richibucto-Miramichi.

A.—Along the Sea-Coast. This no doubt was much used, especially by those going towards Miscou and Shippegan, who probably used the Eel River—Portage River (9 C) route to avoid Point Escuminac, which is liable to very heavy winds from the North. Those going to Miramichi River would no doubt take the Portage River—Bay du Vin route (9 B).

It is stated by Denys in 1672 (176) that a river on the right as you enter the Richibucto has communication with Miramichi, and also later, in speaking of the Miramichi, he states that a branch goes towards Richibucto. The River on the left must be the Aldouane, but of course it has no such possibility and he must have confused it with the passage through the lagoons to the beginning of the next mentioned route (9 B).



MAP No. 10. THE BAY DU VIN-KOUCHIBOUGUAC PORTAGE.

B.—Bay du Vin-Portage River. According to tradition this was a very important route in early times for both Indians and French. Its course as mapped for me by Mr. D. Lewis of Escuminac is shown upon the accompanying map No. 10, and Mr. Lewis describes it as follows: The route ran up the Bay du Vin River three miles, turned up Gulliver's brook four miles, which brought the traveller to within two or three hundred yards of the Two Mile Brook, emptying into Grand or Eel River, up Grand River two miles to Juniper Brook, up Juniper Brook to the lakes at its head, across those lakes to others on the North Branch of Portage River and down this to Kouchibouguac Bay. The country through which the route passes is a

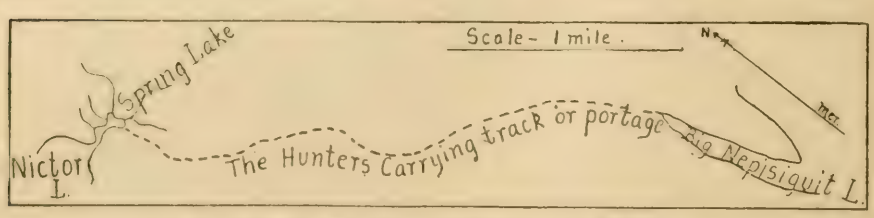
great level peat plain, with many small lakes, and the streams have little fall. Midway of the route is a pine grove, called "Coffee Island," a favourite camping place for travellers. This route has been used by the Indians within the memory of Mr. Lewis, and tradition says it was the regular route for the French from Miramichi to Beauséjour.

The route is clearly shown on the Franquelin-DeMeulles map by the continuous line used on it to show portage routes. It is perhaps this route to which Denys, in 1672, refers as a route from Miramichi to Richibucto, though in speaking of Richibucto, he clearly states that it ran from a branch of that river, which seems an impossibility.

C.—Eel River-Portage River. Another Portage River empties into Miramichi waters east of Grand or Eel River, and heads in lakes near others on Eel River, emptying into Northumberland Strait; (Map No. 10) this probably formed a minor portage route, especially for those going directly North or South along the coast and keeping inside the islands, enabling them to avoid the winds of Cape Escuminac. Possibly a route ran between the two Portage Rivers.

10. St. John-Nepisiguit.

A.—Nictor Lake-Nepisiguit Lake. This was one of the most important routes across the Province, though not an easy one to travel. The Tobique is from its head a very swift river though but little broken by rapids and not at all by falls. The Nepisiguit however, as its Indian name *Win-peg-ij-a-wik*



MAP NO. 11. THE TOBIQUE-NEPISIGUIT PORTAGE.
From Berton's Plan of 1837; × ⅔.

signifies, is a "hard river," falling a thousand feet in seventy miles, and much broken by falls and rapids. Hence as a through route this was probably less used than the much easier Restigouche. The Portage between the lakes is an easily travelled path somewhat over two and a half miles long; it is still used and no doubt is very old. Its course is shown on the accompanying map No. 11, and it is marked on the Geological Survey and other maps. This portage is marked on the Franquelin-DeMeulles map of 1686 by the word *Oniguen*, the Maliseet word for Portage (*Oo-ne-gun*), and the Lakes are given correctly, more so than upon any map for the next hundred and fifty years. It was probably by this route that Father Bernardin was travelling from Nepisiguit to the St. John when he perished of hunger and fatigue in 1621.[1]

On the Nepisiguit the old portages around Indian Falls, the Narrows and Grand Falls are all on the north or left bank.

[1] LeClercq, Nouvelle Relation, 211.

11. Miramichi-Nepisiguit.

A.—Along the Sea-coast. In common with the rest of the North Shore, canoe travelling was easy along this coast; by carrying across occasional narrow sand-necks, nearly the whole voyage from Miramichi to Bay Chaleur could be made inside of islands and through lagoons. The route is fully described by Smethurst, who in 1761 went over the route, going southward. He says of it: "We coasted this afternoon thirty miles upon these inland salt lakes. This country is so full of the finest possible conveniences for canoes, that it must blow a perfect storm to disturb them" (p. 14). Smethurst mentions a portage six miles south of Shippegan, evidently that from Pokemouche to Tracadie Lagoon, and also another, evidently that from Tracadie to Tabusintac. The latter was by what is still called Portage River. It is mentioned also by Plessis in 1812 (Journal, 169). There appear to have been other portages from Tabusintac to Miramichi, for on the former river on a large plan a "portage brook" is marked just below Stymest's Millstream. There was also probably a portage from the upper Pokemouche to the Gaspereau creek, for an old plan names the small creek (a mile east of Mattampeck on the south) forming the eastern boundary of the Indian Reserve *Waginchitch*, i.e. *O-wok-un-chich*, "little portage." It is mentioned in Perley's report of 1841.

It is stated in Slafter's Champlain that there was a portage from Tracadie to Bass River, but probably this is an error.

Early plans of Shippegan Island name the large cove south-west of the present Pandora Point, *Portage Cove* or *Portage Bay*, but this probably has reference to an early "Portage road," through the interior of the island to Alemek Bay.

B.—Portage River-Gordon Brook. This was a much used route. It leads from Portage River into Gordon Brook, which is called by the Micmacs *O-wok-un*, "a portage." This brook, though rough at its mouth, affords fairly easy canoe travel for some fourteen miles to the portage. A road probably following nearly the course of the portage is shown on Wilkinson's map, and it is known to residents of the Miramichi though now abandoned.[1] The portage is mentioned by Denys in 1672 (183). LeClercq, in 1677, mentions two routes from Nepisiguit to Miramichi, a longer, which was probably this, and a shorter, leading through the woods from near the "*Sault des Loups marins*" (probably Pabineau Falls) directly through the woods, used apparently only in winter and traversed on snowshoes. By this he went himself to Denys' Fort, (probably near Neguac) in winter, suffering great hardships.

Above Bald Mountain, on the Nepisiguit, is a valley called Emerys Gulch, extending south six miles to the North-west Miramichi. A winter portage road now follows it. Probably it was anciently used as a portage route, but I can find no record of it.

In Dashwood's "Chiploquorgan," an account is given of his passage from the Nepisiguit, near the Main South Branch, through to lakes on the Sevogle, but this could not have been a regular route. No doubt the Indians often struck away through the woods regardless of portages, leaving their canoes, as in this case.

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1 A branch of it is said to have run from near the north branch of the Portage River to the Narrows, and over this Sir Edmund Head passed about fifty years ago.

12. St. John-Restigouche.

A.—Grand River-Wagan. This was the most travelled of all routes across the Province. The Grand River is easy of navigation up to the Wagansis (i. e., Little Wagan), up which canoes could be taken for some two miles. A level portage of two or three miles leads into the Wagan (Micmac *O-wok-un*, "a portage") a muddy, winding brook, which flows into the Restigouche, which to its mouth is a swift but smooth-flowing stream, unbroken by a fall, and almost without rapids. The total fall from the portage is not over 500 feet, and hence it is far easier to ascend than the Nepisiguit, and consequently was the main route across from Bay Chaleur to the St. John. For the upper waters of the St. John a route from the mouth of the Nepisiguit by Bay Chaleur to the Restigouche and thence to the St. John would be both considerably shorter and much easier than by the Nepisiguit-Tobique route.

This portage is marked on Bouchette, 1815, Bonner, 1820, Lockwood, 1826, Wilkinson, 1859, and the Geological Survey Map. On Van Velden's original survey map of the Restigouche, 1786, a "Carrying-place across the highlands." about nine miles,is given, doubtless a portage directly from Wagan to Grand River. This route was taken by Plessis in 1812, (Journal, 267), by Gordon (p. 23), who fully describes it, and by many others. It is said in McGregor's British America, 1833 (II., 66), that the courier then travelled up this river with mails for New Brunswick and Canada, evidently by this route. Formerly the alders which blocked the Wagan and Wagansis were kept cut out by travellers, and even by workmen paid by the Provincial Government (as I have been told), but since a road has been cut within a few years from the St. John directly through to the Restigouche at the mouth of the Wagan, this route is no longer used, and probably is now practically impassable.

B.—Green River-Kedgwick. This portage is marked, an old and new path, on the maps of the Geological Survey, running from the Pemouit branch of Green River, six miles across to the southwest branch of the Kedgwick. Both rivers are difficult of navigation because of their swift currents and rapids. The route must have been used only by hunters, as it is too difficult and roundabout to be used as a through route. It is referred to obscurely by Munro in 1783.

There is said to be a portage path from the northwest branch of Upsalquitch directly across to the Nictor branch of Tobique, but I have been able to obtain no information about it. It must be long, difficult and very rarely used. The Restigouche can also be reached from the St. John by the Nictor-Nepisiguit route (10 A) and the Nepisiguit-Upsalquitch route, to be described below (13 B), but this would not be used as a direct route.

13. Nepisiguit-Restigouche.

A.—Along the Sea-coast. This route is safe for canoes, for landing is everywhere easy, and doubtless it was greatly used.

B.—Nepisiguit-Upsalquitch. Though not a part of a through route, this portage was no doubt much used by hunting parties. Up to Portage Brook the Nepisiguit is very difficult of navigation; Portage Brook is fairly easy up

to the portage, which is about three miles long, and by an easy path leads to Upsalquitch Lake. From the lake to its mouth the Upsalquitch is rapid, and with several falls, and thus difficult of navigation. The portage is marked on the Geological Survey Map.

Wightman, in 1839 (Boundary Blue-book of 1840), passed from Nepisiguit to Upsalquitch, and thence apparently to Jacquet River, showing a portage between those rivers. Returning, he came up Middle River and thence to Upsalquitch, but his exact route is not stated.

On the Peters survey map of 1832 is marked a "Tattagouch Portage Brook: Tattagouch Lake about 15 miles," but applied wrongly to the Upsalquitch Portage Brook, which in turn is confused with Third Forks Brook. Probably the Tattagouch Portage Brook was really Forty-mile Brook, and there was a hunter's portage between it and Tattagouch Lake.

14. Restigouche-St. Lawrence.

A.—Metapedia-Matane. There appear to have been two routes between these rivers. Wilkinson's Map has on the Casaupscul, "Has a portage to Matane." Bouchette, on his map of 1831, marks a portage from Metapedia Lake to Riviere Blanche, which is perhaps an error for the Matane. Bouchette also refers in his Topographical Dictionary to a portage direct from the lake to the St. Lawrence. This route is mentioned by St. Valier in 1688, and is probably the route referred to by Champlain. Von Velden's Map of 1786 states that after reaching the head of Metapedia Lake "the travellers take the woods, and after ten leagues march, they reach the R. St. Lawrence, near the rocs of Grand Matice."

B.—Patapedia-Metis. This portage is marked on the Geological Survey Map as of three-quarters of a mile, from Awaganasees (i. e. O-wok-un-chich, Micmac for "little portage") to Upper Metis Lake. Bellin, in his "Remarques sur la Carte" of 1755, says that one can go by the Metis to the St. John. This might be possible by the Mistigougeche, Kedgwick Lake, Kedgwick and Green River (12 B), by a fairly direct, but very difficult route, and also easily by the Patapedia, Restigouche and Grand Rivers (12 A).

C—Kedgwick (Quatawamkedgwick)-Rimouski. This portage is marked on the Geological Survey Map, and is described in Bailey and McInnes' Report of 1888, M, 22. It is over a mile in length, between the lakes at the extreme heads of those rivers.

15. St. John-St. Lawrence.

A.—Touladi-Trois Pistoles. This was one of the principal routes from the St. John to Quebec. It led through Lake Temiscouata by the Touladi River to Lac des Aigles, thence to Lac des Islets, thence by a short portage path to the Boisbouscache River and down the Trois Pistoles. This route is described in Bailey and McInnes' Geological Report of 1888, M, pages 26, 28, 29, where it is called "one of the main highways.... between the St. John River and the St. Lawrence."

B.—Ashberish-Trois Pistoles. Another route from Temiscouata to Trois Pistoles was by way of the Ashberish River. This portage is marked on Bouchette, 1831, and is mentioned by him in his Topographical Dictionary,

and by Bailey in his "St. John River" (page 48). It was by either this or the last-mentioned route that Captain Pote was taken to Quebec in 1745, as he describes in his Journal, but the description is not clear as to which route was followed. The compass directions and the portages and lakes mentioned by him would rather indicate the Ashberish route, though the editor of the Journal sends him by the Lac des Aigles. This route is shown on the Franquelin-DeMeulles Map of 1686,[1] with the continuous line used on that map for portage routes, and it is probably this route that is marked on Bellin of 1744, and on many following him.

C.—**Temiscouata-Riviere du Loup.** As early as 1746 a portage path was projected along this route where now runs the highway road. A document of 1746 (Quebec Ms. IV., 311) reads, "Nous donnons les ordres nécessaires pour faire pratiquer un chemin ou sentier d'environ 3 pieds dans le portage depuis la Rivière du Loup à 40 lieues audessous de Québec jusques au Lac Témisquata d'ou l'on va en canot par la rivière St. Jean jusqu' à Beaubassin, et ce pour faciliter la communication avec l'Escadre et pour y faire passer quelques détachement de françois et sauvages s'il est nécessaire." Whether or not this path was made we do not know. In 1761 this route was examined by Captain Peach (as a map in the Public Record Office shows), and about 1785, a road was cut along it as a part of the post route from Quebec to Nova Scotia. From that time to the present it has been much travelled, and is often referred to in documents and books.

D.—**St. Francis-Riviere du Loup.** The exact course of this portage I have not been able to locate, but it probably ran from Lake Pohenegamook to some of the lakes on the LaFourche branch of the Riviere du Loup. The Indian name of the St. Francis, *Peech-un-ee-gan-uk* means the Long Portage (*Peech*, long, *oo-ne-gun*, a portage, *uk*, locative). The first recorded use of this portage is in LeClercq in his "Etablissement de la Foi." He states that about 1624, Recollet missionaries came to Acadia from Acquitaine, and thence went to Quebec in canoes by the River Loup with two Frenchmen and five Indians. It is first shown roughly on a manuscript map of 1688,[2] very clearly on Bellin, of 1744, and on several others following him, and on Bouchette of 1815. It is mentioned in a document of 1700 (Quebec Ms. V. 348) as four leagues in length. It was by this route St. Valier came from Quebec to Acadia in 1686 or 1687, and a very detailed account of the difficulties of the voyage is given in his narrative He states that he travelled a short distance on the Riviere du Loup and Riviere des Branches and a long distance on the St. Francis. This route he describes as shorter but harder than that ordinarily used.

On the unpublished DeRozier map of 1699, two portages are shown in this region, one from some branch of what is apparently the St. Francis to the Trois Pistoles, and one from another river to the westward of the St. Francis,

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1 The lake emptying northwest and joined to two lakes flowing into Lake Medaouasca on this map (copy in these Transactions, new series, III., sect. II., 364) is called Trois Pistoles in the original, though the name is omitted on this copy. I have pointed out in the above-mentioned paper the remarkable and cartographically-important error on that map by which the Tobique (Negoot) is made to empty into Lake Temiscouata where the Touladi really enters. This error produced a profound distortion of the maps of this region for considerably over a century. It is possible that the error arose by a confusion of the Indian name of the lake on the Touladi (Abagusquash, on Bouchette, 1831) with Nipisigouichich, applied to the Nictor branch of Tobique.

2 Cartography of New Brunswick, 360.

perhaps from Lac de l'Est, to the Riviere du Loup, but they are given too inaccurately to admit of identification.

Between the Temiscouata and St. Francis basins are several portages; one from Long Lake at the head of the Cabano to the St. Francis, and another from Long Lake to Baker Lake; and there are other minor ones, all marked on the Geological Survey map.

E.—Black River-Ouelle. On some early maps, such as Bellin, 1744, the Ouelle is made to head with a branch of the St. John, which can be only the Black River. The Morris map of 1749 marks a portage from the St. John to the Ouelle, and has this statement: "Expresses have passed in seven days by these Rivers from Chiegnecto to Quebec." The exact route of this portage I have not been able to determine.

F.—North-West Branch-Riviere du Sud. This portage is first referred to in a letter of 1685 from Dénonville to the Minister:[1] "Je joins a cette carte un petit dessin du chemin le plus court pour se rendre d'icy en huict jours de temps au Port Royal en Acadie, par une riviere que l'on nomme du Sud et qui n'est qu'a huict ou dix lieues au dessous de Quebec. On le ramonte environ dix lieues et par un portage de trois lieues on tombe dans celle de St. Jean qui entre dans la baye du Port Royal." This is probably the Grand Portage referred to by Ward Chipman in one of his letters of the last century.

F.—St. John-Lake Etchemin. Portages between these rivers are mentioned by Bouchette, under "Etchemin" in his Topographical Dictionary. The river received its name from its use by the Etchemins (Maliseets and Penobscots) as a route to Quebec.

II.—THE PERIOD OF EXPLORATION.

1. Routes of Cartier and of Champlain.

Of the many explorers of the eastern coast of Canada prior to Cartier, no one is known to have reached the shores of New Brunswick, though there is no doubt that some one of them gave the name Bay of Fundy. This Province, therefore, in this period had but two explorers, both of whom, however, have left ample records of their voyages. One was Cartier, who first made known our North Shore, and the other was Champlain, who did the same for the Bay of Fundy. In fact, it may be claimed that these two are New Brunswick's only early explorers, the only men sent out for the distinct purpose of making discovery and properly recording their results in maps and reports. An exception should, however, be made for DeMeulles, who, in 1685-1686, made a voyage of inspection and exploration to Acadia, which resulted in a Report,[2] and especially in the fine Franquelin-DeMeulles map, which did for the interior what Cartier and Champlain had done for the coasts.

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[1] Quebec Ms. I, 346.

This Report I have tried in vain to trace. It is not with the original map in the Archives du Depot des Cartes de la Marine in Paris.

There were, of course, many others who explored small areas, particularly the Jesuit and Recollet missionaries and later surveyors, and there are many maps showing explorations of which we have no other record.[1] But usually these later explorations were incidental to some other object, and the records are scanty; and they may best be considered along with the periods to which chronologically they belong.

Cartier's course, in 1534, along our North Shore, has been fully traced in several Memoirs, and is summarized in the preceding Monograph of this series (335-336). It is shown also on the accompanying Map No. 39. This voyage touches our present subject only in connection with the identity of the places mentioned or named by him, and for New Brunswick these were very few.

His *Baye de Sainct Lunaire* was the head of Northumberland Strait.

His "triangular bay all ranged with sands" was Miramichi Bay.

His *Cap d'Espérance* (Cape of Hope) was our North Point of Miscou Island.

His *Baye de Chaleur* was the present bay of that name.

The other names contained on maps reflecting his voyage, but not in his narrative, are discussed in the preceding Monograph already referred to.

It is held by DeCosta (Magazine of American History, IX., 1883) that it is probable the St. John River was descended in 1569 by David Ingram, an English sailor put ashore two years before in the Gulf of Mexico. Ingram's narrative, as given by DeCosta, is, in part, as follows:

"After long travell the aforesaide David Ingram with his two companions Browne and Twid came to the head of a River called Gugida [Garinda] (*sic*) which is 60 leagues west from Cape Britton wher they understode by the people of that Cuntrie of the arivall of a christian wheruppon they made ther repaire to the sea-side and then found a Frenche Captaine named Monsr. Champaigne who tooke them into his shipp and brought them unto Newhaven and from thence they weare transported into England, Anno dni 1569. Thro Monsr. Champaigne with diverse of his Companions weare brought into the village of Barimah [Bariniah] (*sic*) about 20 miles up into the Cuntrey by the said examinate [i. e., Ingram] (*sic*) and his 2 companions by whose meanes he had a trade with the people of diverse sorts of fine furres and of great red leaves of trees almost a yarde long and about a foote broad which he thinck are good for dyeing.

Also the said Monsr. Champaigne had ther for exchange of trifeling wares a good quantitie of rude and unwrought [wrought] (*sic*) sylver."

DeCosta thinks the Gugida a form of Ouigoudi, and hence the St. John; but here he is in error, for Ouigoudi was not the name of the St. John. His other evidence is scanty and conflicting, so that it is not

[1] As in the fine Survey Map of 1754, given in the preceding Monograph, page 376.

possible at present to decide upon this subject, and it must remain with the probabilities against Ingram having descended the St. John.

Champlain, in his narrative of his voyage to Canada in 1603, mentions in the present New Brunswick, *Tregate*, *Misamichy*, whose identity is plain, and also a river *Souricoua*, which has been supposed to represent either the Shediac or the Scadouc, but which I have already (page 250) given reasons for believing is a river near Pictou. It is possible that the location of the legend of the Gougou (chapter XIII.) is Miscou Island. In his voyage to Acadia in 1604, he entered the Bay of Fundy, and coasted to Minas Basin, then coasted past Cape Chignecto to the New Brunswick coast. The identity of the places described and named by him in New Brunswick has already been in part discussed in the preceding monograph (page 349), and in summary, with a few new points, is as follows:

R. St. Louis, on his maps (no doubt the "petite rivière" of his narrative) was Vaughans Creek, at St. Martins; it probably exists corrupted in *Point St. Tooley*, the eastern headland of Quaco Harbor. That it was Vaughans Creek, and not the other stream at Quaco, is shown partly by the position of the name R. S. Louis, on the 1612 map, and partly by the fact that the name St. Tooley is attached to the eastern, and not the western headland.[1]

Ille perdue, on the maps only, was probably the small island at Quaco Head. The "*cap assez bas, qui avance à la mer*," of his narrative, is no doubt Quaco Head, which is low at its extremity. The mountain, "*un peu dans les terres . . . qui a la forme d'un chapeau de Cardinal*," is no doubt Porcupine Mountain, in the Mount Theobald district, which has, as seen from the hills near Quaco, a symmetrical form, with steep sides and a flattened top, answering very well to the shape given in pictures for a cardinal's hat.[2]

The "*pointe de rocher qui avance un peu vers l'eau*," four leagues to the southwest, where there were strong and very dangerous tides, was no doubt the present McCoy Head; and it was this point which is called *Cap de Mine* on his maps, for near it they found a cove about half a league in circuit containing a mine of iron. This mine was probably at West Beach, between Cape Spencer and Black River, where iron occurs in the cliffs[3]. The beautiful bay containing three islands and a rock was at the mouth of the St. John. Of the islands, the two at a league from the cape making to the west, were of course Mohogany and Thumb Cap, and that at the south of the river was Partridge Island; while the rock was

[1] On the James I. Map of 1610, showing clearly Champlain's voyage, there is one additional name, *C. Ronde*, further up the Bay of Fundy, near Mathews Head, to which, indeed, it was probably applied from a distance.

[2] Slafter and others name this Mount Theobald, but this is merely the name of a district, and the mountain itself is locally called Porcupine Mountain.

[3] As Dr. G. F. Matthew tells me.

probably the Shag Rocks, though his map of the harbour also shows rocks near Red Head.

C. rouge, on his map, but not in the narrative, was probably Red Head, a conspicuous landmark.

His *Riviere S. Iean* still bears that name, translated to St. John. But Champlain was without doubt in error in stating that the river was called by the Indians *Ouygoudi*, for this is their name for a village site, as elsewhere explained[1].

Cap St. Jean, of his map, not mentioned in the narrative, is probably Negro Head.

Isles aux Margos of the narrative were, of course, the Wolves.

Manthane was Grand Manan.

Le rivière des Etchemins was the St. Croix.

L'isle Saincte Croix was the present Dochet Island.

Port aux Coquilles of the map was the present Head Harbor.

Isle gravee of the map was no doubt the present White Head Island.

Illes imuelles, of the map, applied probably to some of the islands near Letite Passage, though possibly to the Wolves.

The meanings and further history of these names may be found discussed under their modern equivalents in my "Place-nomenclature."

The location of the settlement made by DeMonts and Champlain in 1604 will be discussed in the next section.

III.—THE ACADIAN PERIOD.

This clearly marked and interesting period of our history began with the settlement of DeMonts and Champlain at St. Croix Island in 1604, and closed with the coming of the New England settlers after 1760. It has been treated fully by Mr. Hannay in his History of Acadia, though not with much attention to it from our present point of view. Striking events in the history of the Forts of La Tour at St. John, of Cumberland and Gaspereau, together with others in Nova Scotia, are sketched by Bourinot in his "Some Old Forts by the Sea," in these Transactions, Vol. I. The many forts built in this period, and the widely scattered settlements, and the interesting and little known seigniorial grants make it rich in historic sites.

1. Settlements and Forts.

1. The Passamaquoddy District.

A.—DeMonts and Champlain on St. Croix Island 1604-1605. The history of this part of America begins with the settlement by Champlain and DeMonts on St. Croix, now Dochet Island, in the winter of 1604-1605. A very full account of this settlement, illustrated by a map (No. 13) and a

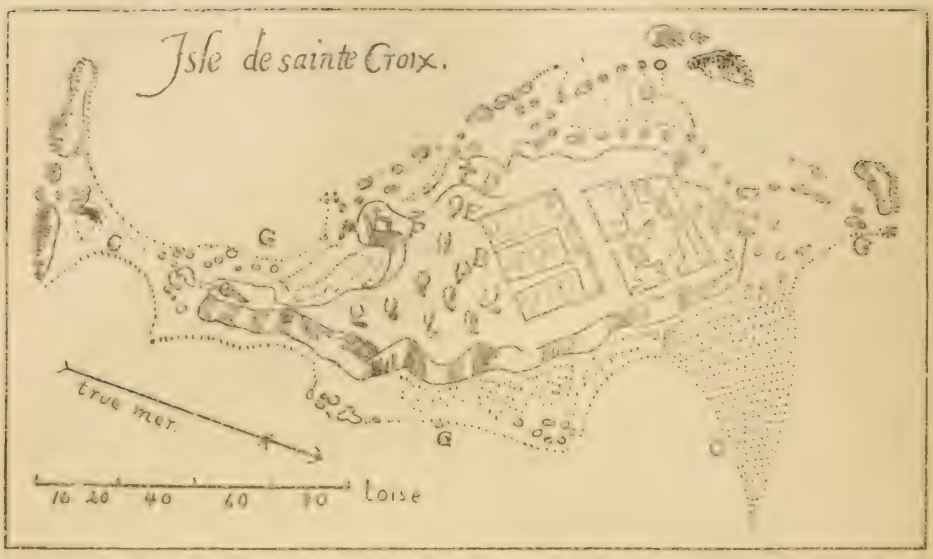
[1] Place-Nomenclature, 269.

bird's-eye view, has been left us by Champlain; and following him, it has often been described by local historians. Politically Dochet Island is now a part of Maine, but historically it belongs to ancient Acadia, whose heir was Nova Scotia and later, in this part, New Brunswick. The situation of St. Croix Island is perfectly well known, and there is not the slightest question as to its identity; Champlain's map alone, if all other evidence failed, would locate it with absolute certainty. Late in the last century remains of the buildings were found in explorations made to settle the identity of the island in connection with the question of the identity of the St. Croix of the boundary disputes, but every trace of these ruins has long since disappeared. But as to the exact site of the settlement on the island, and the changes that have occurred in the island itself since DeMonts' settlement, there is some error prevalent. The place is of such great historic interest that some examination of these questions will be of value.

Dochet Island, the *Isle Saincte Croix* of Champlain, lies in the St. Croix river opposite the village of Red Beach, Maine. It is a small island of less than 400 yards long and a little over 100 yards wide, with an area of about six acres, (see Map No. 15). It is highest along the western shore, which is precipitous, rocky, wooded with small trees, and some forty feet high, the highest point on the island, at X on map No. 15, not exceeding 50 feet. It slopes down to sea level towards the west. At the lower end is a high terrace of sand and clay ending in steep bluffs, beyond which are two densely wooded isolated knolls. Near its highest part are the several buildings of a United States Light Station, where lives the light-keeper and his family, the only residents of the island. Most of the island is an open pasture with small bushes here and there, though to the northward of the buildings is a good fenced garden. The central part of the island is now a series of bare rocky ledges, with some soil between, whose limits are shown on the accompanying map No. 15. No doubt in earlier times these ledges were, in part at least, covered with soil and trees.

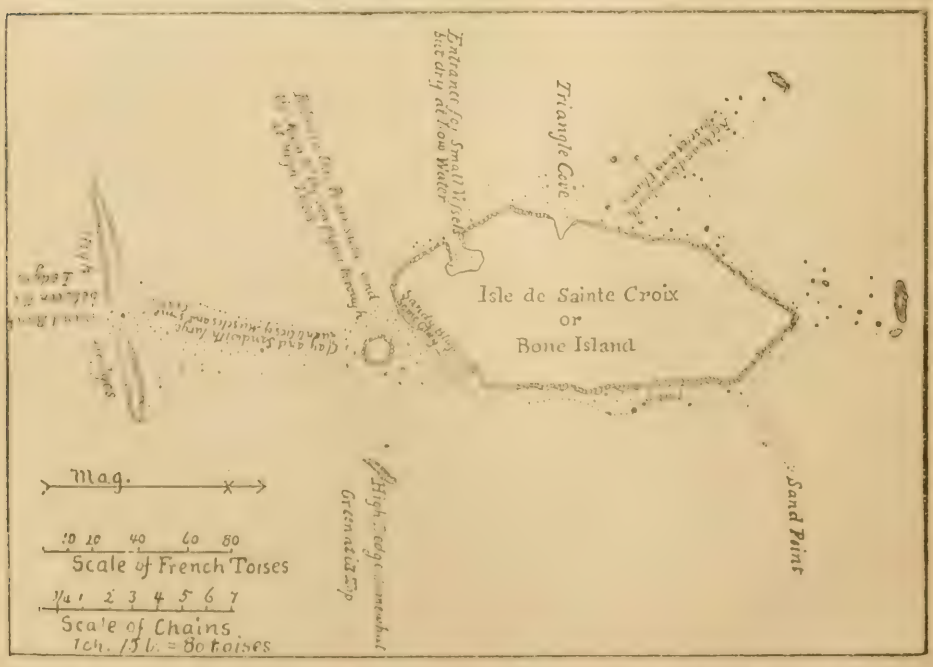
In addition to Champlain's map of the island (Map No. 13), there is extant one made by Wright in 1797 (Map No. 14). In June, 1898, I made a survey of the island with compass and tape, and prepared the map given herewith (Map No. 15).[1] A comparison of the three of 1604, 1797, 1898, shows the following facts: The island has washed away very little if any at its upper end, but a good deal at the lower end. The knoll on which DeMonts' cannon were mounted, now a densely wooded mound, was then continuous with the sand bluff of the main island; it had become separated in 1797, and now is cut off by a considerable interval of low beach. The cove near the chapel on Champlain (curiously less pronounced on Champlain than on Wright) has, since 1797, deepened until it has cut through the bluff, thus separating another knoll, which now stands out by itself connected with the sand bluff only by a low narrow ridge of sand, hardly higher than the beach. This very considerable removal of sand is said, however, not to be entirely the result of the action of the waves, but partly to the removal of many scow-loads to the mainland for building purposes. The site of the chapel has undoubtedly been washed away, and at least a part of the burial ground. Indeed the land in this part of the island has washed

[1] Though the angles and measurements were carefully taken, the outline is not strictly accurate, for I found subsequently that my compass gave for some directions considerable error, due to the nickel with which it was plated.



MAP NO. 13. ST. CROIX (DOCHET) ISLAND, BY CHAMPLAIN, 1604; × ¼.

A. Le plan de l'habitation.
B. Iardinages.
C. Petit islet servant de platte forme à mettre le canon.
D. Platte forme où on mettoit du canon.
E. Le cimetière.
F. La chappelle.
G. Basses de rochers autour de l'isle saincte Croix.



MAP NO. 14. ST. CROIX (DOCHET) ISLAND; SURVEY BY WRIGHT, 1797; × ⅛.

away much within the memory of the present light-keeper, to such an extent that a well formerly of some use is now on the rocky exposed beach. It is possible that it was the exposal of the skeletons of many of the victims of the dreadful winter of 1604-1605 that gave the island its name, Bone Island, by which it was known at the close of the last century.

At the south-west end of the island, and elsewhere as well, are old cellars which are often mistaken for those of the DeMonts' settlement. Old residents, however, state that these are cellars of small houses which stood there within the present century, and their position by no means allows of their belonging to Champlain's buildings. Probably not all of these seeming cellars are so in reality, for some of them may be holes left by money-diggers, for whom this island has naturally been a favourite resort.

MAP No. 15. ST. CROIX (DOCHET) ISLAND, SURVEYED BY THE AUTHOR, 1898.

C. Cellars, mostly modern.
GGGG. Approximate position of DeMonts' gardens.
Gm. Modern garden.
H. Highest point of the island.
K. Knoll on which DeMonts' cannon were placed.
LH. Lighthouse buildings.
S. Another isolated knoll.
SSSS. Approximate site of DeMonts' settlement.
W. Supposed old "French" well.
Wm. Modern well now on the beach.
The irregular dotted line incloses exposed ledges.

A comparison of my map with that of Champlain shows that the settlement must have stood on the north side of the central band of rocks, on the highest part of the island, (where there is a plateau of good soil, sloping slightly to the westward,) but somewhat overlapping the rocky ledges, while the gardens must have been to the southward of the rocks. It was on the north end of the island the ruins were found by Robert Pagan in 1797. No doubt the rocky ledge marked on my map by H, the highest point of the island, was between the settlement and the gardens, which is fully confirmed by the testimony of Robert Pagan in 1797 (Kilby, 125), who found the rock in exactly this position relatively to the ruins. The approximate position of the settlement is shown on Map No. 15 by the dotted lines inclosing the

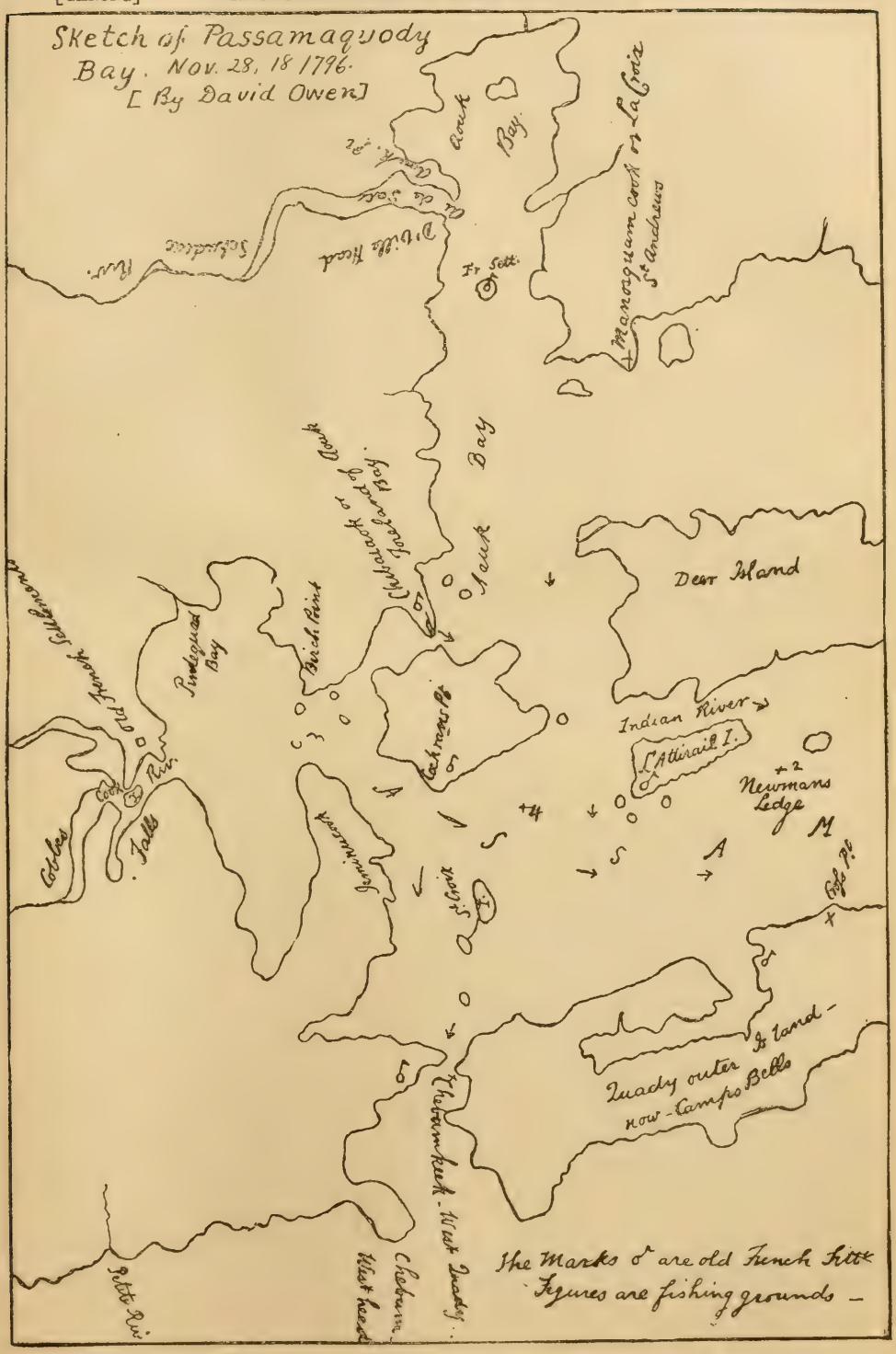
letters SSSS, and of the gardens by the lines inclosing GGGG. The old French well [W] pointed out to visitors is probably not, though possibly it may be, the well shown on the plan of the settlement. It is not far from the correct position, but on the other hand it is extremely shallow, though it may have been deeper when the island was wooded.

B.—The Acadian Settlements. As to the sites of these we have six lines of evidence, the narrative of Church, place-names, tradition, a published map of 1733 by Southack, the Morris Report of 1765, and a Ms. map of 1796 by David Owen (No. 16), which marks French settlements about Passamaquoddy Bay.

There are no records of any settlers in this region until 1684, when a Seigniory was granted at Passamaquoddy to Sieur St. Aubin, and later others were granted, all of which will presently be mentioned. The census of 1686 gave two settlers with their families at St. Croix ; that of 1689 gave four men, four women and thirteen children, while another in 1700 gave sixteen persons. When Church made his raid in 1704, the settlers appear to have been more numerous, but after that raid they seem to have disappeared from the region, for they are heard of no more.

In Church's narrative of his expedition to this region in 1704, he tells of coming up the west passage of Passamaquoddy and to an island where he found a French house, and captured one Lotriel and his family. This was plainly enough on Indian Island, which on early plans and in early records is called Latrelle and other forms of what is known to be properly La Treille, and Owen's map places a settlement at the southern end of the island.[1] Later Church proceeded up the bay to a place, apparently the present Pleasant Point, (or possibly St. Andrews) where other houses, or rather, huts, were found, in one of which lived a Monsieur Gourdan, probably the Sieur St. Aubin. Again, at the head of the river near the falls, probably at the cove, St. Stephen, lived one Sharkee, properly Chartier. These are the only French houses of which we have record in documents. Since, however, Jean Meusnier had a grant on the Magaguadavic he probably lived there, though we have no hint as to exactly where. Turning next to the Southack map of 1733, reproduced and discussed in the preceding memoir of this series, (p. 367), in which Passamaquoddy River represents the passage between Deer Island and Maine, and St. Croix River represents Letite passage ; "French Inhabitants" are placed apparently on the lower end of Deer Island, and on the mainland opposite. The upper of the latter settlements is no doubt the same as that on Chebaiaok (i.e. Pleasant Point), of Owen's map, and the lower that on Moose Id. on Owen's map, but I know nothing of those on Deer Island. Southack also places French houses on Campobello near what is plainly Harbor Delute, as also does Owen on his map. Tradition points to certain cellars on the peninsula between Curry's Cove and Otter Cove as French, and it was probably here the French houses really stood, a view sustained by Owen's map. Church in his expedition sent a party to this island to search for the French. On the peninsula at the entrance to Harbor Delute, westward of Curry's Cove, DesBarres picture of Campobello, of 1777, shows a sort of arch ruin, which must have belonged to a building of some importance, and possibly here was another French house. Rameau states that St. Aubin's residence at Passamaquoddy was a palisaded dwelling or sort of fort, and possibly this ruin is the remnant of his

[1] This expedition of Church has been fully treated in the Courier Series, XXXI-XXXIII.



MAP NO. 16. PASSAMAQUODDY, BY DAVID OWEN, 1796; × 5/7

dwelling. Owen also places French settlements near Lubec and on Moose Island at Eastport, and about Cobscook Bay, but these I have not attempted to locate exactly. Morris, in his MS. report of his survey of Passamaquoddy in 1765, has this statement :—"There is not the least Vestages of the French Settlements in any other part of the Bay, but upon Moose Island, Fish [i. e., Indian] Island, the Island St. Croix, and the Point on the West side Scoodick River called point Pleasant, where the French had a Fort, and part of the Ditches and Ramparts still appear." This fort was no doubt that which was being built in 1704 by Gourdan (St. Aubin?) and Sharkee (Chartier), as prisoners taken near Penobscot told Church ; but it must have been unfinished, for Church makes no further mention of it. Very probably, as mentioned above, the dwelling of St. Aubin was here. This, of course, would be the French settlement marked at Pleasant Point on the Southack and the Owen maps. The location of all these settlements on a modern map is shown on Map No. 40. Morris' Island St. Croix was not the present Dochet Island, but the present Treat Island near Eastport, as his map and report show (see also Map No. 16). I know of no other reference to a French settlement on this island.

Tradition points to some old cellars at Hill's Point between Oak Bay and the Waweig, as French, and to graves and a well at Letite said to be French, and there is a shadowy tradition of an ancient breastwork on the bluff at Sandy Point, found by the earliest settlers.

We may say, in summary, that in this region there was a large settlement on Dochet Island, and small ones at Indian Island, Campobello, St. Andrews, Pleasant Point, St. Stephen, and perhaps others at other points. But it must be remembered that the censuses show that the French population of this region was always extremely small. The settlers at Passamaquoddy were less farmers than fishermen and traders.

2. *The St. John District.*

A.—Settlements.

The earliest French settlement on the St. John of which we have record was the temporary fishing village at *Emenenic*, mentioned in Biard's letter of 1612, and elsewhere in the Relations of that time. This island was one of those near the head of the Long Reach; which are to this day called by the Maliseets *Ah-men-hen-nik*.

The next settlement was that of the Recollet Mission. LeClercq tells us that the Recollets had their principal establishment on the St. John in 1619, but we have no further clue as to the site of this settlement. He tells us also that about 1624 the Recollet missionaries came to Quebec, and that "They had left the mission which they had on St. John's River a month before in consequence of orders they had received from their provincial in France." [1]

The next settlement is that of LaTour, about his fort at St. John, a subject to be referred to below. Next after this comes the trading station

[1] In "Premier Etablissement de la Foi."

at Jemseg of 1659, which originated the Jemseg Fort, later to be described. Then comes the settlement of the Sieur de Marson and his family and retinue at the mouth of the river, mentioned in the Census of 1676. This settlement was undoubtedly at Carleton, and no doubt on the site of Old Fort.

The later censuses show very slow increase, most of the settlers being seigniors and their families, not Acadian habitants. Thus, the census of 1686 gives eight settlers ; that of 1693 gives twenty, that of 1695 gives forty-nine, that of 1698 gives forty-one. It was evidently not until well after 1700 that any number of Acadians came to settle on the river. There was no other census until that of 1733, which gives one hundred and eleven settlers, and most of these probably had been there but a short time, for a document of 1732, cited below, implies that a colony had only recently settled on the river. The reason for so small a population in so fertile a region is doubtless to be found in the preference of the Acadians for the rich marsh lands of the head of the Bay of Fundy, which were more abundant than they were able to settle. After the expulsion, however, in 1755, the population received great additions from those who escaped from Beauséjour, and from some of those who found their way back from the southern provinces to which they were transported, so that Monckton in 1758 found them on the river in considerable numbers, and one document of 1759 estimates them at six hundred. (Broadhead, X., 973.) Probably by the Acadians the St. John River was thought undoubted French territory, for the French always claimed that the Acadia ceded to England in 1713 included only the peninsula, the present Nova Scotia, while England maintained that it included all of ancient Acadia on the mainland, a contention which she supported first by logic, and later, and more effectually, by force of arms.

The sites of the residences of the seigniors of the St. John will be discussed later. We shall consider first the sites of the Acadian settlements. For these we have seven lines of evidence, the Morris Maps of 1758 and of 1765, the Report of Monckton's Expedition to the St. John in 1758, a MS. Report of 1762 by Bruce, and one of 1765 by Morris, place names, and tradition.

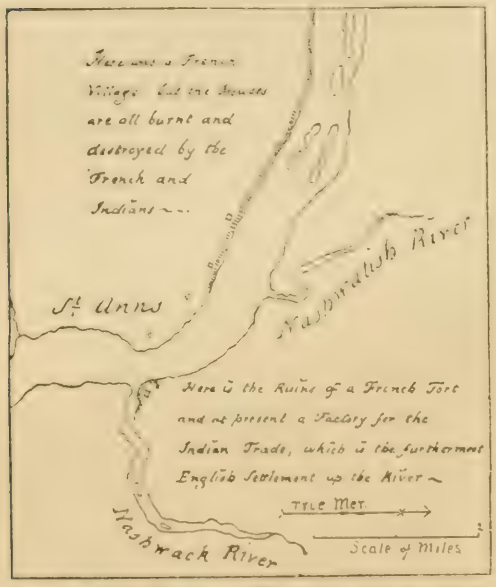
A.—French Village, Kingsclear. The origin of this village is uncertain, but as there is no early mention of it, it probably was established after Monckton's expedition in 1758. Neither Bruce's Report of 1762, nor Morris' of 1765, make mention of it, though both refer to the settlements at St. Annes. Probably it was founded by Louis Mercure, a French courier in the employ of the English, who settled here with some of his countrymen, and with most of them removed in 1788 to Madawaska. A full list of these settlers, together with others in the vicinity, is given in Collections, N. B. Historical Soc. I., 110. Tradition places its exact original site on the great intervale a short distance below the present Indian Village, and Munro in 1783 speaks of it as a "French Village on a semicircular point of good intervale." It is

probably to this settlement that Abbé Bailly refers, in a letter of 1768 from Aucpac, in speaking of eleven Acadian families living near Aucpac who had been confirmed at Sainte Annes (Casgrain). It is said locally that some of these settlers founded the Masrol, or Myshrall, settlement between Kingsclear and Hanwell.

Apparently there were other French settlers between the Keswick and Nashwaaksis, for when those lands were laid out and granted in 1786 several lots were granted to Acadians, and the records of the time speak of a "French location" there.

St. Valier, in 1688, tells us the region about the present Springhill was named *Sainte Marie*, and he thought it a good place for settlers.

B.—St. Annes Point. This is without doubt the "colony below the village of Ecoupay (Aucpac)" of the census of 1733, with 82 inhabitants, and the settlement of 20 families 30 leagues up the river of a document of 1749 (Murdoch, II., 135). In 1756 there was here a French officer with 20 men (Murdoch, II., 304), and there are several other references in documents of the time to this important village of St. Annes. Bruce, 1762, says there were 600 or 700 acres of land cleared here, and Morris, 1765, states that the French had settlements all the way from St. Annes to Aucpac. It was perhaps settled just before 1732, for a document of that year (Murdoch, I., 479) speaks of a small colony of French having settled on the River St. John. It stood on the present site of Fredericton, scattered along the river as the Morris map of 1765 (Map No. 17) states, from opposite the mouth of the Nashwaak upwards. It is here too that tradition places it, and the remains of an old French road were discovered here by the first settlers.[1] Munro, in 1783, speaks of land here cleared by the French, about two miles in extent. This settlement was destroyed by expeditions from the mouth of the river made in the winter of 1758-59. Yet the Acadians evidently returned to it, for in 1761 some forty of them were there, and a few were there in 1783 (Murdoch II, 402, 403). It was the second most important Acadian



MAP No. 17. ST. ANNES POINT AND SURROUNDINGS. From Morris, 1765; × ½.

[1] "The only considerable relic of the French at the point is a portion of corduroy road dug up by city workmen on the corner of Regent and George streets. The plan of the town surveyed by Dougald Campbell in 1786 shows this road, which crossed the point in a sweeping curve, passing through the blocks facing on Charlotte, George and Brunswick streets. At the corner of Regent and Charlotte the land was marshy and so the road was corduroyed there." MacFarlane's "Fredericton," (St. John *Sun*, 1892).

settlement on the river. The exact site of the church is not known, but a later grant implies it was near Government House.

The census of 1695 gives fourteen settlers at Nashwaak, doubtless living near the fort.

C.—Freneuse. This settlement, mentioned in the early censuses as having several settlers (36 in 1698), was of course the residence of Sieur de Freneuse. It is represented on several early maps as situated on the east bank of the St. John, exactly opposite the mouth of the Oromocto, no doubt at the bend of the river at Upper Maugerville, but no trace is now known of its presence. In 1696 Freneuse had there a house, barns, etc., as a lease of that date shows (mentioned later).

Probably there were also Acadian settlers around the mouth of the Oromocto; Bruce's report of 1762 mentions three hundred acres of cleared land here.

D.—Jemseg. It is possible that settlers lived near the fort at Jemseg, which site will be discussed below. It was somewhere in this vicinity that Sieur de Chauffours resided, with whom John Gyles lived, as he relates in his narrative. Monckton, who burnt some houses there, states in his report of 1758: "This settlement had been abandon'd some Years past, by most of the Inhabitants On account of its being overflow'd in the Spring by the Freshes." A document of 1756 in the Parkman Ms. [New France, I, 265], speaks of Jemseg, a French village of thirty or forty houses, a little below the mouth of the Jemseg river. Possibly Lower Grimross is here meant.

E.—Grimross. This was an important settlement at the time of the expedition of Monckton in 1758. Monckton states that there were here some fifty houses and barns, which he burnt, and the Morris map of that year [published in the preceding Monograph, 390] shows numerous buildings exactly on the site of the modern Gagetown. Of this village, Monckton says: "This Village was settled by the Inhabitants of Beausejour, when drove off from thence in 1755." Some of the Acadians must have returned to Grimross, for in 1761 a few were living there [Murdoch II, 403]. This must have been at one time the principal settlement on the river. Morris, 1765, says: "Grimross is the most considerable settlement that the French had upon St. Johns; but their Houses are now all demolished and their improvements laid waste." Monckton speaks also of houses above the head of Grimross River.

F.—Chofour. A few houses just below Gagetown shown on the Morris map of 1758. Connected no doubt with Sieur de Chauffours.

G.—Villeray. A few houses at the present Lower Gagetown, about opposite the middle of Musquash Island; on the Morris map 1758. Monckton says he burnt houses there.

H.—Robicheau. A settlement of four houses on the Morris map of 1758 just above Tennants cove. The possible connection of this with an earlier settlement or fort here I have discussed fully in my Place-nomenclature [p. 257]. Monckton speaks of "a few Houses that were some time past Inhabited by the Robicheaus," which he burnt.

There was perhaps a small settlement at the mouth of Nerepis about the fort (see later), for Bruce, 1762, tells us there were 12 or 15 acres of clear land here.

I.—St. John. At the mouth of the river St. John in the census of 1733 are given eighteen settlers. The site of this settlement is unknown, but it was possibly

in Carleton, where there are traditions of French gardens found by the early settlers, which are probably the same as those shown upon Bruce's map of the harbour of 1761 (see Map No. 37). There is also a tradition of a French burial place at the barracks, St. John.

On the Fort Howe Ridge is an old well, locally called the French well, and mentioned as such in Kelcher's Field-book of 1848. He mentions also, and marks on his maps, the remains of an old French block-house on the ridge, but probably this is an error, as there is no other evidence of a settlement here, and the situation is a very improbable one.

J.—French Village, Hammond River. The origin of the village is uncertain. The Sieur de Breuil had here a Seigniory in 1689, and it is possible that the village was founded by him ; but it is much more probable, since it is not given on early maps, that it was one of those formed by the Acadians after the expulsion. This is confirmed by a statement of Munro in 1783, who says of it : "Sir Andrew [Snape Hamond] has a valuable tract of good Interval and upland which includes a French settlement of fifteen families who have been settled there fifteen years previous to his grant." As the grant referred to was made in 1782, the settlement would have been formed in 1767. According to Allison [p. 4] the Acadians took out grants about 1787, but soon after sold out and moved away, probably to Madawaska (But see Archives, 1895, N.B. 13). The site of the settlement is marked on all the later maps.

Passing next to tradition, in this case well sustained by the testimony of place-names, there are said to have been settlers about French Lake, north of Maquapit, particularly on the island and on the eastern shore near the passage, and about French Lake on the Oromocto, and the testimony of the place-name, French Lake, leaves little doubt that this is correct. It is possible that these settlements were later than the other Acadian settlements on the river ; and since they are retired places not easily reached by the English vessels, the French may have settled on them after they were driven off the main river by Monckton's expedition of 1758. They are said also to have lived at Swan Creek, and about the outlet of Lilly Lake St. John, where cellars and roads made by them are said to have been recognized by the early settlers.

On Mitchell's map of 1755 a "Village of Acadians" is placed on the present Salmon River emptying into Grand Lake, but this is probably an error, as there is no other record of its existence.

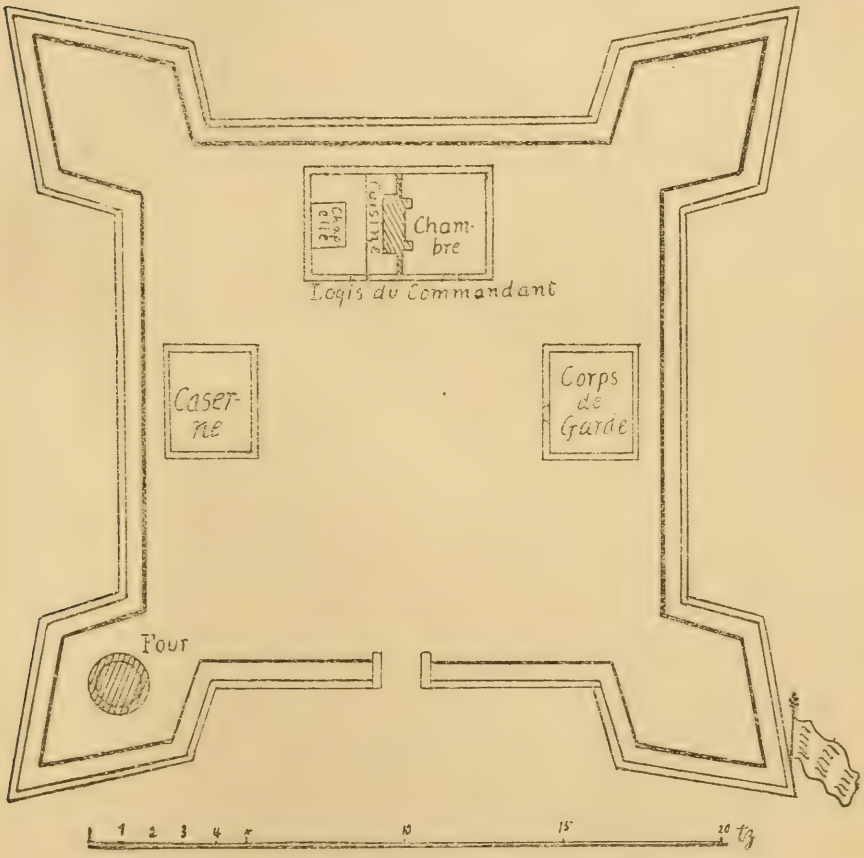
The modern Acadian settlements on the river are entirely at Madawaska. Licenses of occupation, later followed by grants, were given to them shortly after the coming of the Loyalists, and here this much-persecuted people have since lived in peace, unless the transference of half of them to the United States by the Ashburton treaty of 1842, without asking their leave, may be regarded as an exception.

There are traditions that the French also had dikes at Dipper Harbor, Musquash Harbor, and on Quiddy River at Martins Head. The Frenchmans Creek at Musquash does not mark a settlement, but according to Gesner, a place of retreat of a French ship, probably that mentioned in Quebec Ms. II. 152.

B. Forts.

Fort Meductic was an Indian rather than a French fort, though sometimes spoken of as French. Its site has already been discussed.

A.—Fort Nashwaak (Fort St. Joseph). This fort, prominent in its time, was built by Villebon in 1692, withstood a siege by the English in 1696, and was abandoned in 1700. There is no doubt as to its site; it stood in the upper angle between the Nashwaak and the St. John, close to the water, on high



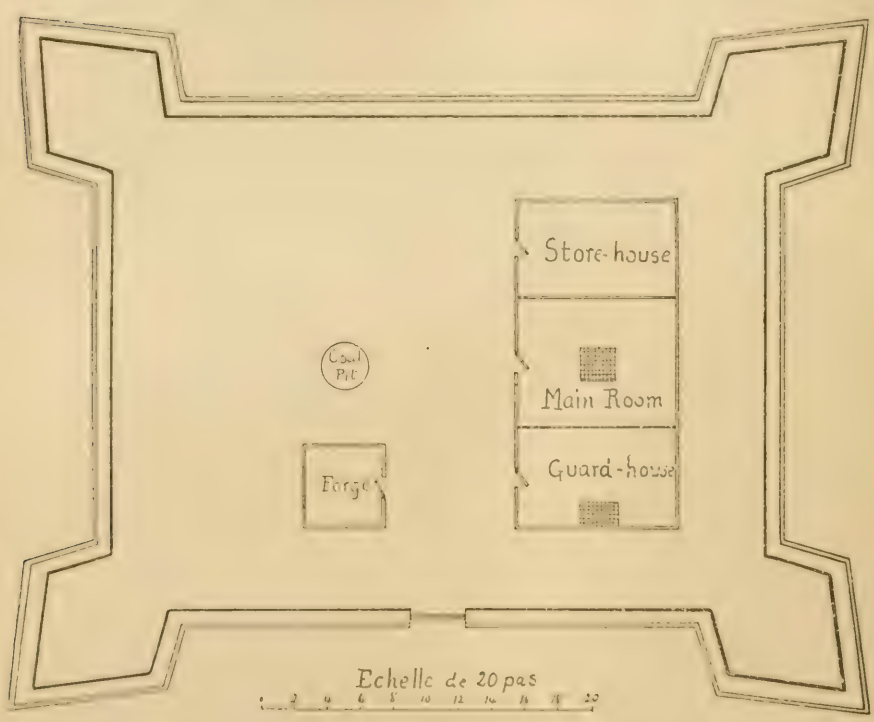
Map No. 18. Plan of Fort Nashwaak (Fort St. Joseph), From a plan of 1692 in the Archives de la Marine, Paris; × $\frac{7}{13}$.

intervale now washed away, so that the site of the fort was over what is now the gravel beach. Its ground plan is shown very clearly on the accompanying outline of a plan from the Paris archives[1] [Map No. 18], and its situation on the Morris 1765 map [Map No. 17]. Cadillac in 1692 speaks of this as a Micmac fort, and it has been claimed that it was built by early

[1] A bird's eye view, not here reproduced, accompanies the ground plan.

Scotch settlers, both of which are probably errors. Mr. Hannay visited the site in 1867, and saw there remains of ramparts, etc., though the next year he speaks of the fort as entirely washed away. [Stewart's Quarterly, I., 99, and II., 141].

B.—**Fort Jemseg.** This fort was apparently built by Thomas Temple during the English possession of Acadia in 1659. He records having built a trading post fifty miles up the St. John. It was handed over to the French in 1670, at which time a description of it was prepared (published in Memorials of the English and French Commissaries,) from which, and after analogy with plans of other forts of the time, I have compiled the accompanying plan [Map No. 19]. Between 1672 and 1676 it was greatly strengthened by



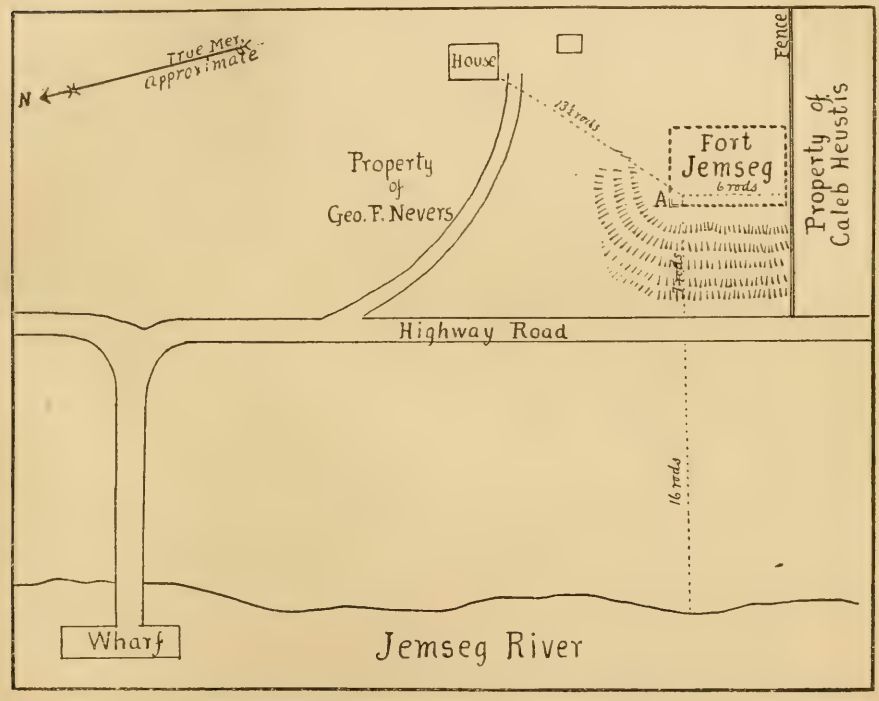
MAP No. 19. APPROXIMATE PLAN OF FORT JEMSEG, COMPILED FROM A DESCRIPTION.

Sieur de Soulanges as related in the grant of the fort to him in that year:

"Il a fait diverses réparations et augmentations à celui de Gemisik, afin de le rendre logeable et de défense, n'y ayant auparavant qu'un petit longement de bois tout ruiné, entouré seulement de quelques palissades à demi-tombées par terre; en sorte que pour réedefier le tout, il lui auroit coûté beaucoup, et se verroit encore contraint d'y faire de grandes dépenses pour le remettre en état, à cause de la ruine entière qu'en fait les Hollandois en le faisant prisonnier dans le dit fort, il y a deux ans." (Memorials, 748.)

Unlike most forts of the time it was not square, which no doubt was because of the shape of the knoll on which it stood. Its situation is known

locally, and is illustrated by the accompanying sketch map [Map No. 20], compiled partly from sketches of my own, partly from notes supplied by Mr. Victor H. Paltsits, and partly from measurements made for us by Mr. D. L. Mitchell, of Gagetown. It stood on a small mound near the top of a hill on property owned by Mr. G. F. Nevers, and old residents remember when its outlines were distinct. The site commands a fine view both up and down the river. On the knoll is still to be seen an angle of earthwork [at A., Map No. 20], but a foot or less in height of which the position and appearance make it seem probable that it is a remnant of the rampart of the fort; but otherwise no trace of it whatever is to be seen, though numerous relics



MAP No. 20. SKETCH OF SITE OF FORT JEMSEG.
A. Corner of fort still visible.

have been dug up here and in the hollow just below. Mr. Paltsits has discovered what seems to be the end of an old drain beside the road.[1]

Below Spoon Island on the east bank is the structure known locally as the "Old French Fort." Its origin and age are very obscure. If it really is French it is no doubt connected with the place called *Nid d'Aigle* on the early French maps, a subject discussed in my Place Nomenclature, page 257, and referred to earlier in this paper. It was perhaps built in the time of Villebon, as a protection to his fort at Nashwaak, or perhaps later, as

[1] Perley, in his published lecture, 1841, states that the fort stood "at the lower entrance of the Jemseg, near the residence of Charles Harrison, Esq., and on property now owned by him." All evidence at present available sustains the view taken in this paper.

a protection to the Acadian settlements above on the river. The battery is however, not French at all, but was built in 1813. It had no connection with the Telegraph station which stood on this hill late in the last century. [See later]. It stands on a bluff where the river is very narrow, about two miles above Tennants Cove, and certainly the position is a most commanding one. On the level, fifty feet or more above the river, is still a distinct crescent-shaped earthwork some two or three feet high, and fifty feet across its arc. On a level still higher up the hill is a hollow, twenty feet across and five or six deep, locally called the Magazine, while still higher up are the remains of the block house where lived the soldiers in charge of the semaphore telegraph, and some of the timbers of this house can still be seen. (See also *New Brunswick Magazine*, III., 228).

C.—Fort Nerepis. This was no doubt originally an Indian fort, as already discussed, and is mentioned by Villebon in 1697. In 1753, however, it was occupied by the French under Boishébert, and thus figures in the events of the time, and it is often called after him, Beau Bear or Beauhebert Fort. It is no doubt this fort which is referred to in a document of 1753 (Archives, 1894, 194) as a new fort 20 miles up the river armed with 24 guns and 200 men. It is marked on many maps of the time, as D'Anville, and Green-Jeffreys of 1755, and also on the Morris Maps of 1758 and 1765. It evidently stood very close to the river, as shown by the latter (Map No. 21) in the angle between the two rivers. Its site is, however, entirely unknown to the residents, and no remains of it can be seen.

MAP NO. 21. SITE OF BEAUHEBERT'S (*i. e.*, BOISHÉBERT'S) FORT.
From Morris, 1765 ; × ½.

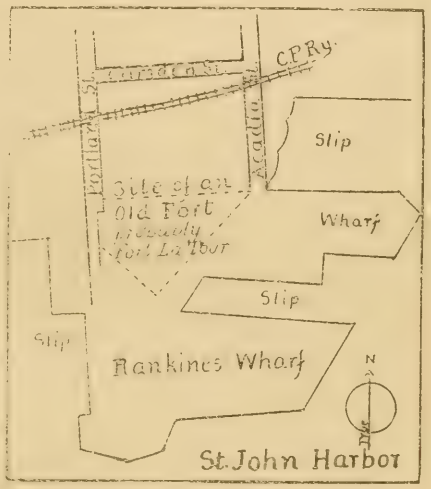
There is said to be a tradition of an old fort at Harding's Point, but I know nothing further of it.

D.—Fort LaTour. Despite much discussion and some controversy the site of this fort is not yet with certainty determined. The subject is fully discussed in a paper in these Transactions, IX., sect. ii., 61, and also in the New Brunswick Magazine, Vol. I., 20, 89, 165. In my opinion, all available evidence drawn from the narrative of Denys, and from all known maps, tends to show that it stood on the east bank of the harbour, probably at Portland Point, on the knoll at the head of Rankin's Wharf, (Map No. 22. also 37.) Mr. Hannay claims that it stood at Old Fort, in Carleton ; but even in his most recent article he adduces no positive evidence for his view, but contents himself with combating minor points in my argument. Since the subject is so fully discussed in the articles above mentioned, which are readily accessible, it is unnecessary again to go over the ground here. I will simply point out this important fact, that if Fort LaTour be assumed to have stood at the Old Fort in Carleton, we not only meet with well-nigh insuperable difficulties in explaining the narrative of Denys and all of the maps of the time, but we have no explanation of the origin of the fort which is known to have stood at Portland Point ;[1] on the other hand, if Fort LaTour is assumed to

1 It may be claimed that this was the "new fort" which Church in 1696 found the French building on the east side of the river. But in fact a fort stood here earlier as shown beyond doubt by the Franquelin map recently published by Marcel. This map which for reasons given in my "Carto-

have stood at Portland Point, Denys' narrative is perfectly clear and consistent; the placing of the fort on the east side by nearly all the early maps, and its removal to the east side in later and more accurate editions of those which at first placed it on the west side, is perfectly plain; and the origin of the fort at Portland Point is explained. While I have never claimed that the evidence is logically conclusive that the fort stood at Portland Point, I do think that the probabilities drawn from the sources mentioned are overwhelmingly in favour of this position, and that a case for the Carleton site can be made out only by neglecting the aggregate evidence and concentrating attention upon minutiæ in which inconsistencies may be found in the imperfect records of the time. It is by no means unlikely that records will yet be discovered that will settle this most interesting point.

It has been maintained by Mr. W. P. Dole that Fort La-Tour stood where now Fort Dufferin is, and his argument is published in the St. John Sun, Dec. 5, 1888. It rests, however, chiefly upon traditions, which are most untrustworthy for events long past. It is said that an early battery could also be traced here, and that there was an old well called locally the "old French well."



MAP No. 22. PROBABLE SITE OF FORT LA TOUR.

E.—Charnisay's Fort. It is recorded by Denys that Charnisay built a fort on a little knoll a short distance beyond the flats and creek where the Mill-pond now is in Carleton, and the topography of that region allows this site to have been in but one place, namely, on the site of the Old Fort in Carleton. It was probably the first fort to occupy that site. (Map No. 37.)

In 1659 Temple states that he "had repaired the fort of St. John" (Archives, 1894, 3), but we have no hint as to whether it was that at Carleton or at Portland Point.

In grants to Sieur de Marson in 1676 he is spoken of as "Proprietor of the Forts of Jemseg and of the River St. John." As his Seigniorial Grant of 1672 was on the east side of the river, the Fort of the River St. John was probably there—in all probability on the site of old Fort LaTour.

F.—Fort Martignon. The Sieur de Martignon received a seigniorial grant at the mouth of the river, on the west side, in 1672, and the early censuses return him as living there. On a fine map dated 1708, but belonging much earlier,

graphy" (p. 365) must belong before 1696, marks two forts on the Harbour, one on each side, and names that on the west *F. Martinnon*, and that on the east *F. La Tour*. The "new fort" therefore of Church must have been the repairing of an older one, or else one on a distinct site, and in any event the new works could not have been important, for the next year the site at Carleton was occupied by Villebon as later described.

made by Franquelin, and recently published by Marcel, Fort Martignon is marked on the west side of the entrance to the St. John, while on the east is marked Fort LaTour. Martignon's fort in all probability occupied the site of Charnisay's, and was the second on that site.

G.—Fort St. Jean. In 1700 Villebon built a fort at the mouth of the St. John, whose site is placed beyond question by the plan of it preserved in the French Archives, of which a copy is herewith given. (Map No. 23.) It stood at Old Fort, Carleton, and probably was the third on that site. The higher land that commanded the fort, spoken of in other records also, is the high land on Water street, east of Ludlow, in Carleton. By advice of Brouillan it was abandoned shortly after Villebon's death in 1700.

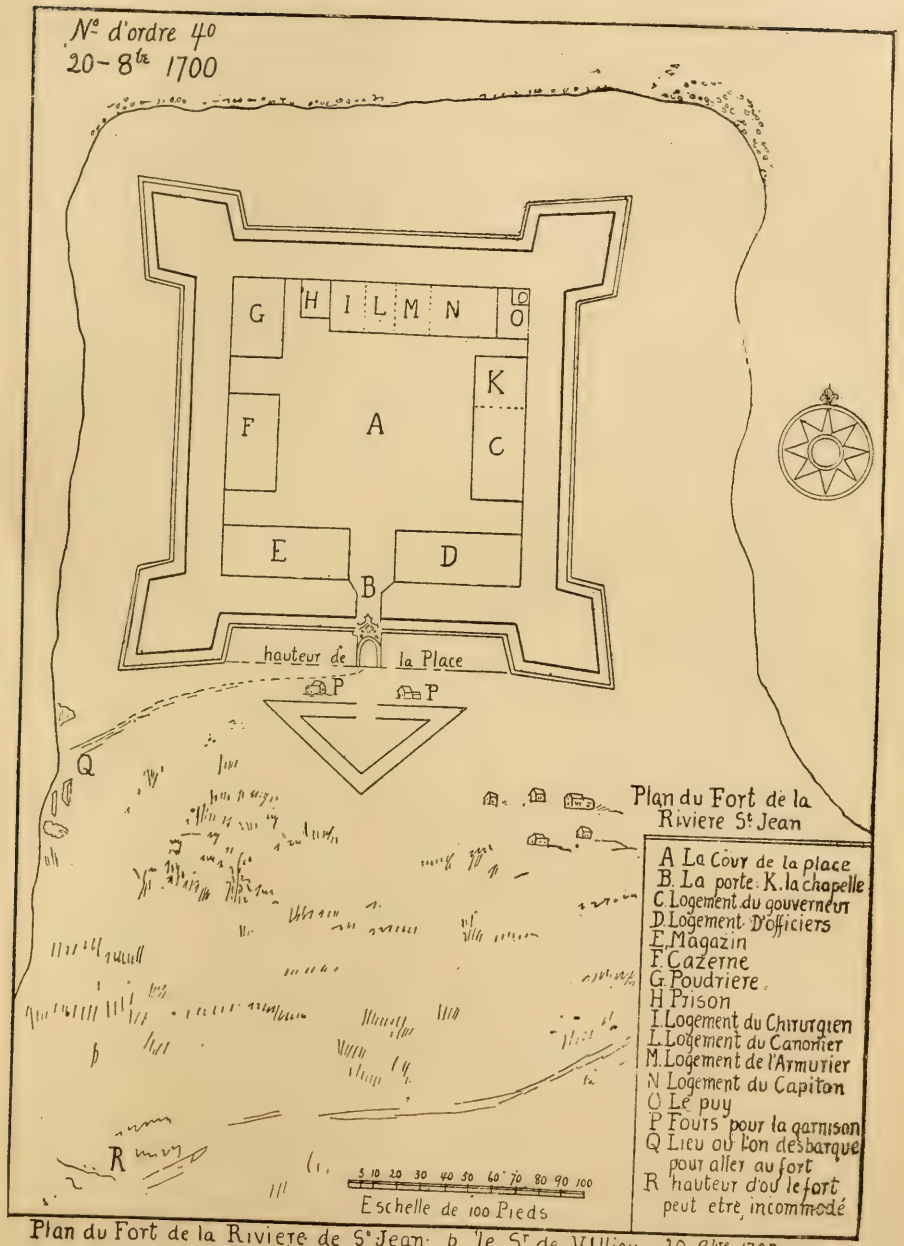
H.—Fort Menagoueche. In 1749 the French troops came to St. John with the intention to erect a fort, but they were forbidden by the Nova Scotia Government; but a document of 1753 states that they had greatly strengthened the old fort at the mouth of the river [Archives, 1894, 194], while another of 1755 [Archives, 1894, 206], shows they had partially demolished it. This was also, as shown by Monckton's Report, at the Old Fort at Carleton, and hence probably the fourth on that site.

I.—Fort Frederick. When Monckton landed here in 1758 he found the old fort abandoned, and proceeded immediately to repair it, and his account shows that it was the fort on this site he repaired. It was named Fort Frederick in that year, and was probably the fifth on that site, and the last. It is apparently the Fort called *Fort Monckton* on Morris' chart of Nova Scotia of 1761. The place is now occupied by buildings, but some of the ramparts can still be seen. It is known locally as the "Old Fort," and is generally believed by the residents to be the site of Fort LaTour.

3. The Petitcodiac-Misseguash District.

A. Settlements.

By far the largest Acadian settlements in the territory of the present New Brunswick were around the great salt marshes at the head of the Bay of Fundy, particularly about the mouths of the Misseguash, AuLac and Tantramar rivers. Temple built a trading post at the "bottom of the Bay" in 1659, which was probably in this region. (Archives, 1894, 3). The first settlers removed from Port Royal to Beaubassin (i.e., in the vicinity of Fort Lawrence in Nova Scotia) shortly after 1671. The whole isthmus was granted in Seigniory to Sieur LaVallière in 1676, after which the settlers rapidly increased in numbers and spread to the Memramcook, Petitcodiac and Shepody, until at the time of the expulsion in 1755, they numbered several hundreds in this region. LaVallière had a Seigniorial manor, mentioned in a document of 1705 (Rameau, II. 337), but its site is unknown, though probably it was on the present Tonges Island, which was long called Isle LaVallière. After the expulsion the Acadians were permitted, in 1767, by the Nova Scotia Government, to return and settle on the Memramcook, and this settlement and a small one at Fox Creek on the Petitcodiac, as M. Poirier pointed out in his "Père



MAP NO. 23. PLAN OF FORT ST. JEAN.
From the Archives de la Marine, Paris; × ⅛.

Lefebvre," are the only ones in all Acadia in which the Acadians now occupy lands on which they were settled before the expulsion.

As to the exact sites of their settlements we have the evidence of maps, of which many were made to illustrate the military operations of 1751-1755, of Franquet's detailed report of 1752, and traditions. The earlier settlements were no doubt in the immediate vicinity of the present Fort Cumberland and Fort Lawrence, but gradually they spread to other places. The Acadians tended to settle not far from the churches, of which it is known there was one at each of these places. Both settlements and single farm houses were placed (as the numerous cellars still visible show), close to the marshes on the edges of the low ridges in which that region abounds, while their farms were on the marshes themselves, reclaimed by dykes from the sea. The principal settlements in 1752, according to Franquet's report, were at *Baie Verte*, *Weska*, (Westcock), *LaCoup*, *Le Lac*, *Tintamarre*, and also at *Memnacouk* (Memramcook), *Chipoudy* (Shepody), and *Peccoukac* (Petitcodiac).

A.—Beauséjour. The map of the Isthmus in Mante's History, belonging really to 1755, shows French houses in several places along the edge of the Fort Cumberland Ridge, and also on the eastern end of Cole's Island. The church is here clearly shown near the fort, and tradition assigns to it a position near the eastern road along the ridge, west of the trenches, where its position is still pointed out.[1] (Map No. 44.) The church is yet more clearly shown on the map in the "Memoires sur le Canada," which shows also a village on the same slope and this inscription: "Aboiteau du L'Abbé Le Loutre." It is known that this Aboideau, (i.e. a dam across a tidal river containing a sluice-way so arranged with a valve as to allow the fresh water to drain off and not allow the salt water to enter), was built across the Aulac river, a short distance (about two hundred yards) above the present Aboideau, on which the railroad and highway cross the river.

There are some localities of importance near Fort Beauséjour (Cumberland), as shown on Map No. 44. The "Holy Well," a fine spring, was not far from the church, and is said locally to take its name from the use of its water for holy water. Le Loutre's house is believed to have stood near. The old French burial-ground is said to have been where the later graveyard (Map No. 44) is.

Old cellars, believed to be French, were visible until recently upon Tonges Island, particularly towards its southern end. It is probable that here was the residence of La Vallière, Seignior of Beaubassin, for the island long bore his name.

B.—Westcock. Several houses are shown here on the Mante map, evidently on the margin of the upland near the present site of the village, and towards Sackville. It is marked on most of the maps of the time.

C.—Le Lac. As shown by the French plan of 1779 (really 1755) this village stood near the head of the present AuLac river, apparently on Jolicure ridge

[1] One may locate this site thus:—If one stands at the lower western angle of the English trenches and looks across just to the left of Shepody Mountain, he is looking over the site; and if he advances 18 paces in that direction he will stand about in the middle of the site of the church.

just below the present Rye's Corner. Just above it the road from Beauséjour to Beaubassin crosses the head of AuLac River [see map No. 24.]

D.—Tintemarre Franquet calls this a large village with a missionary, and it is marked upon all of the maps of the time. The Mante map shows this village just above a considerable branch of the Tantramar River towards the west; hence it must have stood above the branch coming from the present Morice's Millpond, along the margin of the upland between the Millpond and the Jolicure Road, and perhaps somewhat above this. Mr. Milner places it about Four Corners, and states that the chapel stood on the present site of the Beulah, with which residents agree. This church stands on the north-east of the four corners. Locally there is said to have been here a French burial ground also.

In some records and on some maps a village, *Pres des Bourques*, is mentioned, though Franquet does not refer to it, perhaps because it was established after his time. The French map shows its situation very clearly, as on the margin of the upland near Sackville not far north of the present highway road to Amherst. Mr. Milner places it on the farm of the late Philip Palmer. On Morice's Brook, it is said locally, were formerly remains of a French settlement, comprising ten or twelve families.

E.—La Coupe. This village is marked on no map that I have seen and I know of no record that definitely locates its site. It must have been near the La Coup river, which is a branch of the Aulac, striking off to the westward just south of the extremity of Jolicure ridge. Considering the very favourable location of the extremity of the Jolicure ridge for a settlement, it is probable that here was its site.

F.—Baie Verte. The old maps show clearly that this village stood precisely on the site of the present village of that name, though there were other houses scattered about in that vicinity, and a few near Fort Gaspereau. Alex. Monro states: "At Baie Verte, near the residence of Capt. Weeks, the French had an establishment of mills; hence the name, Mill Creek, was given to the stream. Around this spot they settled, and here too was their graveyard."

The other villages mentioned by Franquet and on the maps of the time, including another village at Weschkok, LaButte, Les Planches, Beaubassin, etc., were in Nova Scotia, or as Franquet puts it, in Acadia; but their identification is not within the scope of the present paper.

Montresor's map of 1768 marks a "Richart" between West Coup and Pintamat villages, hence in the position of Prés des Bourques. I have no other information upon such a place.

G.—Memramcook. I have no data for settling the exact site of the pre-expulsion settlement. Mante's map places it on the west side not far from the mouth; which is also the case with the French plan, which, however, also places a few houses on the east bank. M. Placide Gaudet, however, writes me that ancient aboideaux have been found near the College, which possibly belonged to pre-expulsion settlers. It is very likely that these were on the upland near the great marshes, just below the present Rockland Bridge. Local tradition states that some ten families lived in pre-expulsion times on Brownell Brook, two miles above Dorchester, and remains of their houses could formerly be seen; and others lived on the front of the "Chapman Farm."

H.—Petitcodiac. For these settlements also we have few data. Rameau gives an account of its first settlement by Blanchard in 1698, but we have no facts

to enable us to locate his settlement. The topography of the river on the maps of 1755 is so distorted as to be of little use in this connection. They represent settlements on both banks below the Bend, but it is quite impossible to locate them further, unless one assumes that they stood near the largest marshes. M. Gaudet, our best authority on matters relating to the history of the Acadians, writes me that an Acadian village stood on the present site of Moncton,[1] but later the settlers moved to Coverdale, where their village was known as *Village de Babineau.* This is confirmed by a "Carte Réduite du Golfe de St. Laurent" of 1754, which marks a "mission" on the east side of this river at about the Bend.

An old plan in the Crown Land Office applies the name *Village Point* to the point on the north of the Petitcodiac just above Mill Stream, which is above the mouth of Turtle Creek. Probably this marks the site of a French settlement, especially as there is dyked marsh near.

It is said locally that the burial-ground adjoining the Baptist Church at Hillsboro is on the site of an old French burial-ground, and that the first settlers of Hillsboro in 1765 found cleared fields, fruit-trees and broken dykes.

It is said in Cockburn's Report on Emigration [of 1827] that the French formerly occupied the intervales at the Forks of Turtle Creek, calling the place *Fourche à Crapaud.* It is very likely that they occupied locations on this, Coverdale and Pollet Rivers after the expulsion in order to be above the reach of English ships, as they probably occupied the French Lakes and other places difficult of access on the St. John for a similar reason.

Pote, in his Journal of 1745, mentions that he marched past several French houses by the side of this river, the last of which was that of bon Soliel [Beausoleil]. One of the Parkman MS. [New France, I., 265] states that in 1756 there were six or eight houses on the Portage from Shediac to Petitcodiac. The present Acadian settlement of Fox Creek was founded, according to M. Gaudet, in 1767, and occupies the site of an old settlement.

I.—**Shepody**. A full account of the foundation of the settlements on this river in 1698 is given by Rameau de Saint Père (I., 237), but none of the records nor maps of the time give any idea of their precise location. There are, however, in the Crown Land Office in Fredericton several old plans which show the location of the old French dykes at Shepody and thus allow an inference as to the location of the settlements. An "old French Dyke" is given on the north side of the entrance to Shepody River, and an "old dyke," with an "Abois D'Eau," between Beaver Brook and the next creek to the eastward of it, called on the plans German Creek. These, however, can represent but a small portion of the dyked lands on this river, of which one of the early maps says "Shepody, one of the best French settlements." Tradition places a large French settlement at Hopewell Hill, and assigns to many old dykes a French origin.

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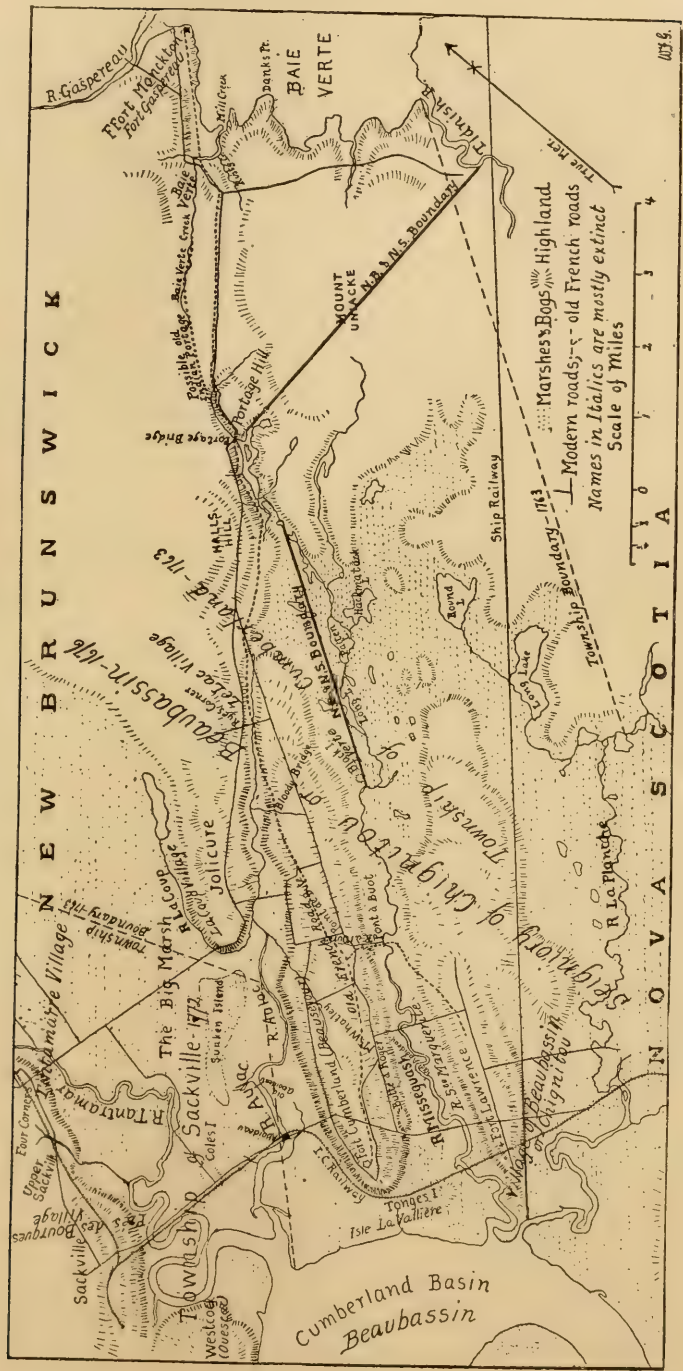
[1] This is confirmed by the following statement from an historical article in the Moncton Times of December 11th, 1889. "Previous to the arrival of these immigrants from Pennsylvania (in 1765) the country in the vicinity of Moncton, in common with other parts of the province, had been inhabited first by the Indians and afterwards by the French, and the ruins of a rude chapel and graveyard were found near where the sugar refinery and gas and water office building now stands, at the lower end of Main street. The late James Beatty, senior, built a house on this site about the year 1839, and in making excavations for a cellar, some sixteen coffins were dug up containing remains supposed to be those of early French settlers.....The bones were respectably interred in the old burying ground near by."



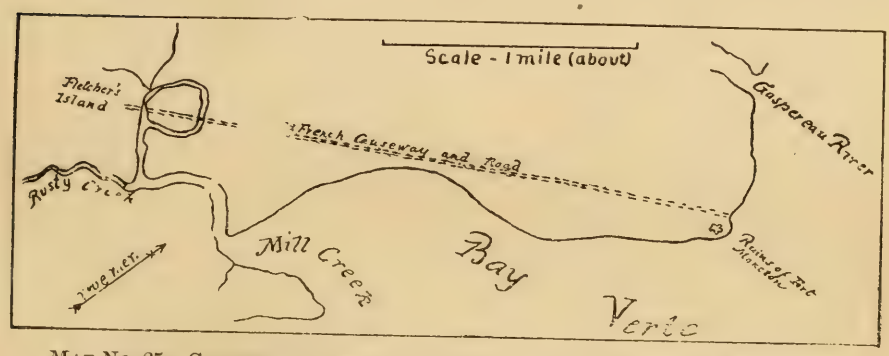
Map No. 24. Historical Map of the Isthmus of Chignecto.

The following account of the French settlements in this region is taken from a well written and apparently reliable anonymous article in the St. John Sun, April 5th, 1893. "For a long time after the departure of the Acadians and even at the present time, are many evidences and remains of French habitation. One settlement existed near what is now the village of Albert, another on what is called the 'point' at Hopewell, while the central village was at what is known as Church brook, just to the eastward of Hopewell Hill. Here was the old French Chapel, located on the eastern bank of the brook. . . . The logs of the old chapel remained long after the arrival of the English settlers, and the dwelling of one of the residents of this village, erected a few years ago, rests on the corner-stone of the once sacred edifice. Here also was the burial-ground, and in summer time are still to be seen the moss-covered mounds, now trampled and forsaken, and the broken headstones that mark the resting place of the Acadian dead..... There are also many remains of old French cellars, mills, etc. These mills were principally on the marsh creeks. The stones from the mills have been found in many instances, and are still in existence. The French dykes all remain. They were not as far out as those of the present day, but still enclosed a large area of marsh. No aboideaux were used, the creeks being dyked along the sides up to the upland."

Of importance in connection with the early settlements are the roads, of which the principal one was that from Fort Beauséjour to Fort Gaspereau. This is marked on many maps of the time, and especially on the plan made by Captain Lewis in 1755, which states that the road was from a survey. The part from Pont à Buot to Portage Hill must have been made before Franquet's visit in 1752, for he marks it on his map, though he went by water between these places. Tradition still points out the site of portions of the road, and it is said that the late Alexander Monro, the surveyor, had in early life traced out the entire road from one fort to the other. He states in his "Isthmus of Chignecto" that the road ran via Jolicure and Portage Hill. From the maps, and from traditions gathered on the spot, the course of this road is drawn upon the accompanying map No. 24. From near Beauséjour to near Portage Hill it followed about the top of the ridge between the two highway roads of the present day. In the gathering of data for this map, as in many other matters connected with this region, I have had the very great advantage of the assistance of Mr. W. C. Milner, whose knowledge of the history of this region is thorough and accurate, and also of Mr. Howard Trueman, of Point de Bute, who knows so well its later history. This main road was more than a mere track through the woods, for it was passable for horses and to some extent for waggons. An important branch of this road, older than the road itself, ran to Pont à Buot, whose location will be considered presently, and thence to Fort Lawrence. Some maps show also a road along the western margin of the Fort Cumberland Ridge, though faintly, and it was probably an unimportant trail to the houses in that vicinity. Some maps mark a road across the marshes from Beauséjour to near the present Sackville, probably not far from the present highway, and this road continues on to the Memramcook, evidently by way of the present road along Frosty Hollow brook. It then continues from the Memramcook to the bend of the Petitcodiac, but the maps are too imperfect to allow us to identify its course. Probably this was but a track through the woods and not a road properly cleared.

Franquet in his report mentions two roads from Pont à Buot to Beauséjour. One, the lower and poorer, led to Butte à Roger; the other, shown on the maps, went up the hill through the woods, the two joining on the hill opposite Butte à Roger.

From Baie Verte village a road ran straight across the flats to Fort Gaspereau. Alexander Monro thus speaks of it: "From Mill Creek, the road, nearly two miles in length, to the fort was in a straight line. About a mile and a quarter of this distance from the creek is marsh, over which the road was made on four rows of piles. The piles were driven into the marsh, and were about eight feet apart, and six feet above ground. On the top of each line of posts, timbers were extended lengthwise, and the whole was covered with plank. Between the marsh and the fort the road, still visible, passes over an upland flat." In a diary of 1755, given by Mr. Monro, we read: "We Passe over a Cassway one & a half mile In Length. Come



MAP NO. 25. CAUSEWAY FROM BAIE VERTE TO FORT GASPEREAU (MONCKTON). From an old Plan; × 8/9.

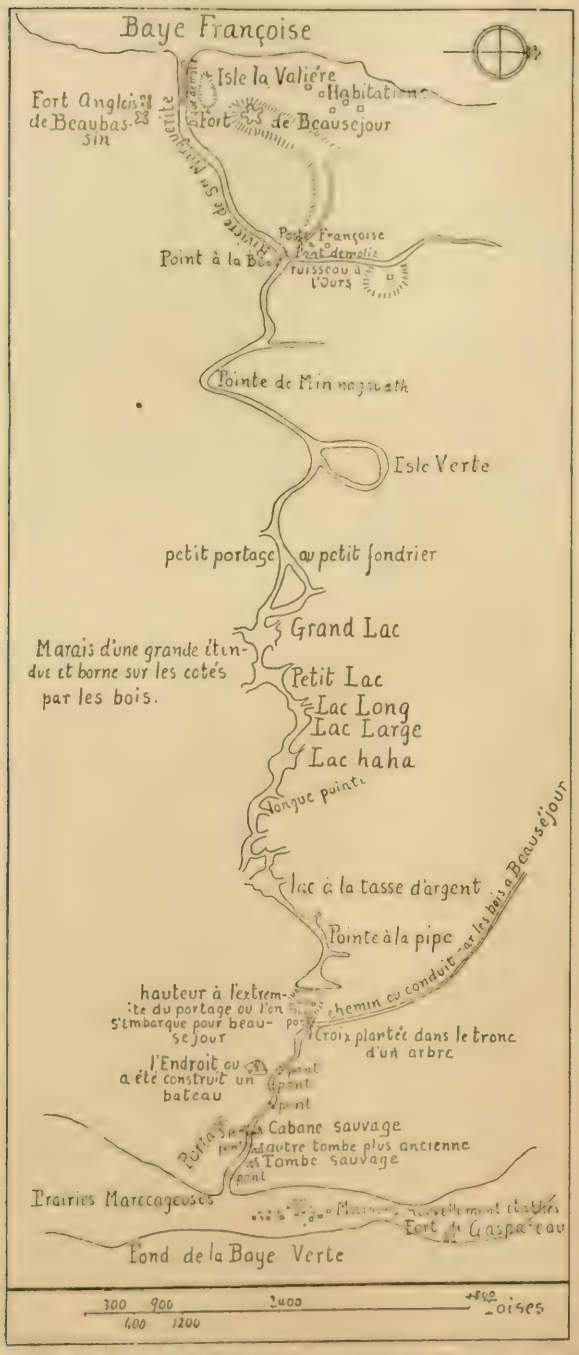
to ye Fort Gauspearu." Traces of this causeway are still to be seen and are known locally. Its exact course is shown on old plans in the Crown Land Office. (Map No. 25.)

In connection with the military operations of 1751-1755, and upon the maps of the time, several places are prominently mentioned. The sites of the principal of these are as follows:

Pont à Buot. The maps show this bridge across the Misseguash about two miles above Fort Beauséjour, at Point à Buot. The place is pointed out by tradition, and is made certain by the extremely detailed maps of Franquet. (Maps No. 26, 27.) The *Riviere a l' Ours* is a small stream crossing the highway road some 400 yards west of Point de Bute corner. There was here a French post later to be mentioned.

Butte à Roger. There is no doubt as to its location. It is shown clearly on the French Plan of 1755 (1779) and elsewhere. Franquet says a guard was kept there. It is the marked, somewhat isolated little hill east of the highway road between Sackville and Amherst, just where it descends Fort Cumberland Ridge, (see Map No. 24). On its top seems to be a cellar, perhaps not ancient.

Some of the other Buttes are easy to identify. Butte à Janot was that from which the Rivière à l'Ours descended, and Janot's house was



MAP NO. 26. THE ISTHMUS OF CHIGNECTO, BY FRANQUET, 1752.
From the Ottawa copy of the original in Paris; × 7/16.

there, according to Franquet, and it is shown on his plan [Map 26]. Butte à Charles was but 120 toises from Fort Beauséjour, and parallel. The Butte Amirande was a half league away, and was perhaps the hill where St. Mark's Church now stands, though it may have been a gravel hill nearer the marsh.[1]

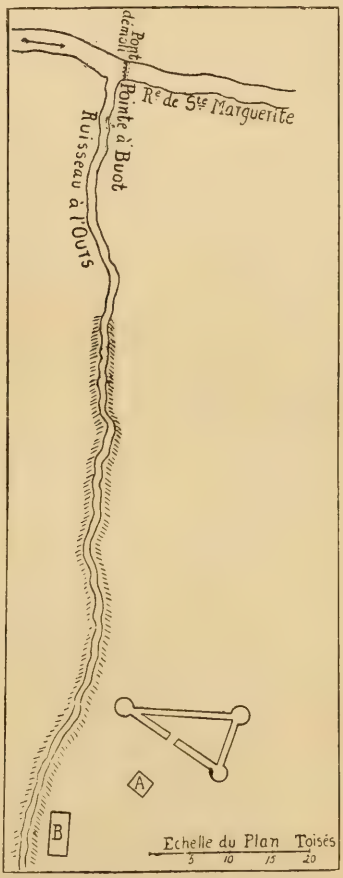
Bloody Bridge. This place took its name from an event thus described by Mr. Milner: "A more tragic affair occurred earlier in the year [1759] when a sergeant and three men of the Provincial Rangers and seven soldiers of the 46th Regiment then at the fort went out to cut wood. They were ambuscaded at a place called Bloody Bridge, and five of them were scalped and stripped."

Its site is well known and marked on Map No. 24. The earthen abutments of the old bridge on which the old French road crossed the small stream here flowing into the Aulac are still to be seen.

Another locality of similar interest is known locally,—a place at the southern end of Jolicure, where Lieut. Dickson and several soldiers were ambuscaded by the Indians in 1757, the men slain and Dickson carried off a captive to Quebec.

Portage Hill. This is marked on the Franquet map [Map No. 26], and mentioned by him in his report as "Butte du Portage." He states there were two houses there, and a storehouse for the reception of goods in transit by the portage route from Beauséjour to Baie Verte. The position of this hill is well known; it is still called *Portage Hill*, and the road passes over it just to the eastward of *Portage Bridge*. [See Map No. 24.] On the very top of this hill, just to the northward of the highway road, is an excavation like a large cellar, overgrown with bushes, which is possibly the cellar of the storehouse, and residents state there were other cellars on the south side of the road, a little farther to the east. Here the portage began from the headwaters of the Misseguash to Baie Verte, as already described.

Old French dykes are known in several places, particularly on the Aulac, where they have been ren-



MAP No. 27. SURROUNDINGS OF PONT À BUOT, BY FRANQUET, 1752. From the Ottawa copy of the original in Paris; × ⅛.

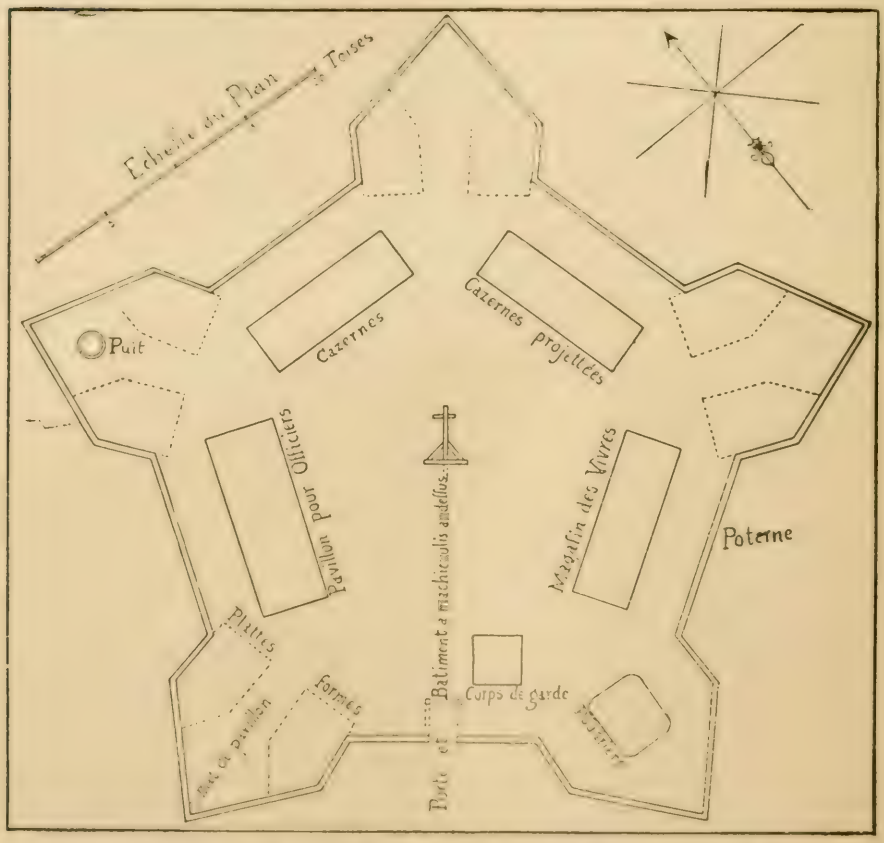
A. Logement du Commandant.
B. Cazernes pour le détachement.

1 These buttes are mostly rounded gravel hills (geologically "drumlins") extending along the southeastern side of the Fort Cumberland Ridge. They would form ideal sites for the houses of the marsh farms.

dered useless by the construction of aboideaux at the mouth of that river. A series of dykes is to be seen on Prospect Farm, at Point de Bute, where they have been pointed out to me by Mr. Howard Trueman, the owner of this place.

B. Forts.

A.—Fort Beauséjour. There is not the slightest doubt as to the location of this fort. It was captured by the British in 1755, renamed Fort Cumberland, altered in details, but not in its main features, and the ruins are perfectly distinct to-day.

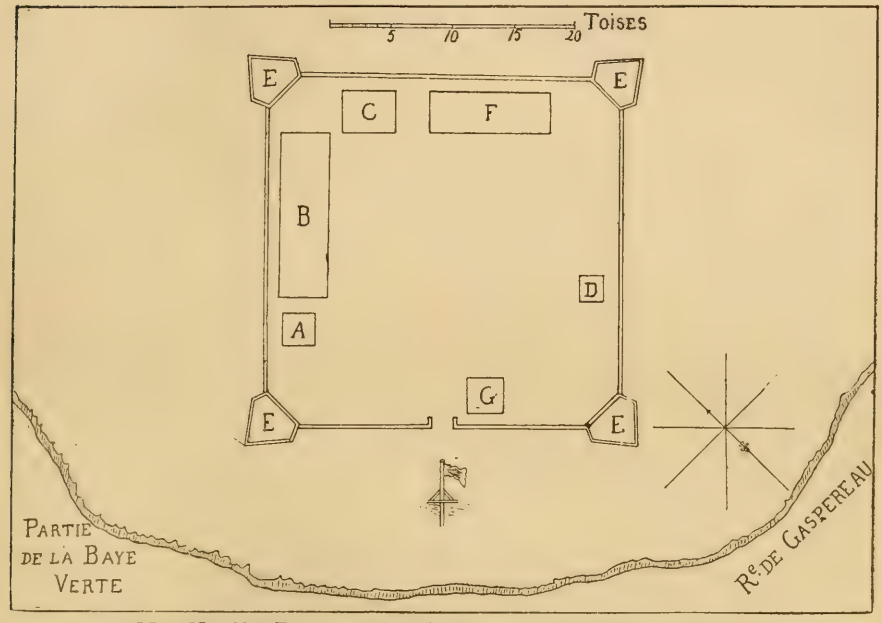


Map No. 28. Plan of Fort Beauséjour, by Franquet, 1752.
From the Ottawa copy of the original in Paris ; × $\frac{3}{7}$.

A plan of the fort is among the Franquet plans, of which an outline is given herewith [No. 28]. Another outline is on the map in the "Memoires sur le Canada." After it became Fort Cumberland several plans of it were made. In the British Museum, King's Library, CXIX., is a series of views of Fort Cumberland of great interest. A plan of the fort accompanies the

report of Robert Morse in Canadian Archives, 1884, XXVII., 1881, 30. Another is in the Crown Land Office, Westmorland Book, I., 40, and it is partially upon this that Map No. 44 is based.[1]

B.—Fort Gaspereau. The site of this fort is likewise perfectly known, for the British, after taking and renaming it Fort Monckton in 1755, altered it only in details, and its ruins are plain to-day. Franquet made a most detailed plan of it, of which an outline is given herewith [map No. 29]. In August,



MAP NO. 29. PLAN OF FORT GASPEREAU, BY FRANQUET, 1752.
From the Ottawa copy of the original in Paris ; × ¼.

A. Logeme [illegible] Magasin.
B. Magasin des Vivres.
C. Logement de l'Officier Commandant.
D. Poudrière.
E. Batiments couverts, etc.
F. Batiment . . . proposé pour loger le détachement.
G. Corps de garde projetté.

1897, I made an examination and plan of the present condition of it, which is given herewith [map No. 30]. It shows the considerable changes which have occurred in the coast line since 1752, and points to the time when the ruins of this fort will be entirely washed away. A full account of the fort was given by E. T. P. Shewen about 1892 in a ten-page pamphlet entitled "Notes of Fort Monckton." There is also a plan in the British Museum differing somewhat from Franquet's.

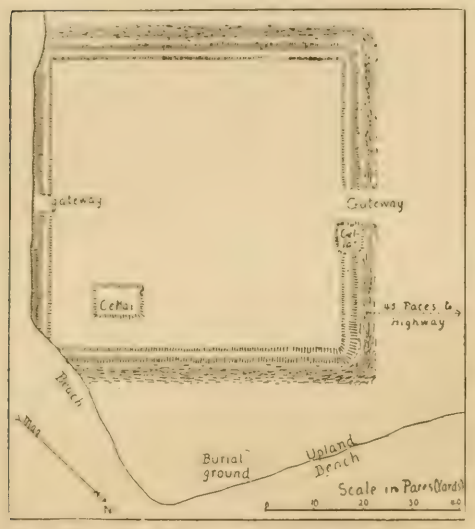
C.—The Post at Pont à Buot. The location of this post is made certain by the fine map of Franquet [map No. 27] ; and he also gives a full description of it in his report. Not the slightest trace of this post now remains, but the measurements so accurately given enable one to find the approximate site.

[1] The compass on Map No. 28 shows that the *Porte* was not where the present main entrance is, but faced the road which led along the ridge.

The course of the Misseguash has changed somewhat since Franquet's map was made, and the river is now much farther out from the shore. The *Riviere a l' Ours* (the small stream west of the present Point de Bute Corner, (Map No. 24) run shere in a gully a few feet deep, as the hachure lines of the Franquet map imply.

There is said locally to have been a block-house about half a mile north of Fort Beauséjour, on the present "Boomer Place," about 100 yards from the road on the highest point of the ridge. It is supposed to have commanded the road leading from the present Sackville.

Franquet's Report mentions also French posts at Weska [Westcock], and Chipoudy [Shepody]. As to the former, I have no idea of the site of the post. As to that at Shepody it is possible it stood on St. Mary's point, for the Mante map and French plan both belonging in 1755, put a fort or post on this point and call it *fort de Shepody*. There is no trace of it to be seen, or known locally.



MAP No. 30. PRESENT CONDITION OF FORT GASPEREAU (MONCKTON).
From a plan by the author in 1897.
Cross-lines are ramparts, lengthwise lines are the ditch.

Between the Memramcook and the Petitcodiac is a point known locally as *Fort Folly Point* [Folly Point on the maps]. I am told by residents that there was a fort on the point on whose site the present light-house was built.[1] and that it was said to have been built by the Acadians during their troubles with the English. Locally it is said it was called Folly because there was really nothing there to defend. It is possible that both here and on St. Mary's Point there were posts for observation of the approaching English and the giving of alarms to the settlers up the rivers. Thus the "Mémoires sur le Canada," [p. 44] mentions with reference to the approach of Monckton's fleet towards Beauséjour in 1755; "Vergor l'ignoroit; des habitans de Chipoudy et de Pékekoudiac, ayant aperçu cette flotte, le lui firent savoir en toute diligence." Probably they passed by land over the Memramcook portage to Westcock and thence across the marshes to Beauséjour.

4. The Richibucto District.

In this part of the Province, from Cape Tormentine to Cape Escuminac, the Acadian settlements became more numerous than elsewhere in New Brunswick. Historically they may be divided into two groups, those formed before the expulsion, and those formed since.

[1] A resident tells me that he helped in the building of the lighthouse, and in making its foundation a wall of stone 23 feet in length, the so-called fort, had to be torn down.

A. Settlements.

A.—De Chauffours' Settlement at Richibucto. The Seigniorial grant to the Sieur de Chauffours of 1684, states that on the border of the river Richibucto, on the coast on the southwest, he had two years previously taken up three arpents of land, and had built a fort of stakes and two houses for his residence and to store the grain he had raised the previous year. The site of this settlement we do not know. Tradition places the earliest French settlement at Richibucto Cape. It was possibly on the south side of the harbour not far west of Indian Island. Cooney states that before 1755 the French were pretty thickly settled at Richibucto, (where the town now stands,) where there was a village of about forty houses, and another small one at the mouth of the Aldouane. Aside from these, however, I know of no reference to pre-expulsion settlements in this region, though there must have been settlers about the different harbours.

The years between 1751 and 1755 were troublous enough for the Acadians about the head of the Bay of Fundy, and many of them retired to Shediac and the other harbours of this coast, and yet more who escaped the expulsion in 1755, retreated to the same region. Bellin in 1755, speaks of all this coast as inhabited. From 1755 onwards considerable settlements were forming about these harbours, and unlike those at Miramichi, Nepisiguit and Restigouche they appear not to have been again disturbed by the English. Much about the history of these settlements has been published in newspaper articles by M. Placide Gaudet, from whom the following facts are taken: The original settlement at Shediac was at Grandigue on the north of the harbour where a large settlement still is, and the present site of Shediac was not occupied until the present century. In 1767 lands were assigned to twenty-four Acadians at Shediac and Cocagne [Murdoch. II., 472]. In 1772 lands were granted to Acadians at Cocagne. The settlement of Buctouche was not founded until 1785, and Richibucto in 1790. In 1791 several Acadians petitioned Governor Carleton for lands on the south bank of Richibucto, and in 1798 they were given a grant of what is now Richibucto village. There were, however, no doubt Acadian settlers much earlier on this river. The large island south of the entrance is on the charts called *French Island*, but is also known as Indian Island. St. Louis de Kent was established in 1805. On the condition of these settlements in 1811, 1812, the Journal of Bishop Plessis is very valuable.

B.—Belair vers Cocagne in Abbé le Guerne's letter of 1756, was, according to M. Gaudet, six or seven miles up the Cocagne on the north side.

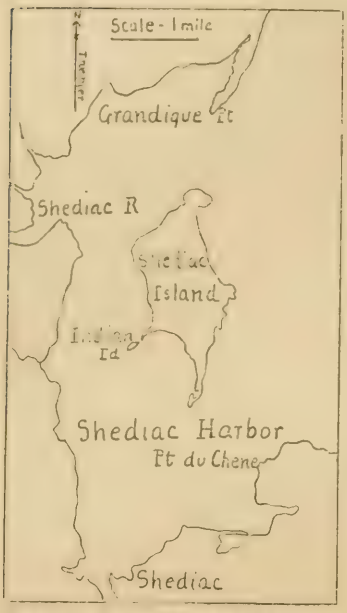
At Cocagne Cape, according to M. Gaudet, is a place still called *Camp de Boishébert*, where Boishébert spent the winters of 1755-56.

B. Forts.

The Fort of DeChauffours, already spoken of, was, of course, merely a palisaded dwelling.

A.—Shediac. But a single fort of importance in this region is known, that at Shediac, often mentioned in early documents and shown on maps. It was built by LaCorne in 1749, and is spoken of in one report as "premier établissement du Roi." Franquet speaks of it in his report as "the first estab-

lishment of the King; there is there a guard magazine and storehouse." Bellin speaks of the "petit fort" here in 1755. It is marked on D'Anville's map of 1755, Green-Jefferys of the same year and Montresor of 1768, in all cases on the north side of the Shediac river a little above its mouth. In 1897 I visited Shediac and made an effort to locate the fort. I found that local tradition pointed to Indian Island, (an island in the harbour so small that it is not shown on most maps,) and that no site on the mainland seemed to be known to the residents [map No. 31]. I visited Indian Island and found the distinct remains of an earthwork some three feet high with a shallow ditch outside. As much of this as can be seen, is shown on the accompanying map No. 32. The island, a flat gravel terrace, 10 to 15 feet above high tide and densely wooded, is rapidly washing away, but it is easy to trace the former extent of the fort from the ruins that remain. It is said by residents of the harbour that this is known as the Indian fort, and that it was called *Fort Sauvage* by the French, and I have been told by an Indian chief that it was built by the Indians for protection against the Mohawks. It is difficult to believe that this very small fort on a tiny island surrounded by salt water was the French fort referred to in the documents of the time, and it may be really a fort built by the Indians themselves, as were Nerepis, Meductic, Richibucto and other Indian forts, while the French fort was perhaps on the mainland. But it is difficult to explain on the latter supposition how all knowledge of it has utterly disappeared.[1]



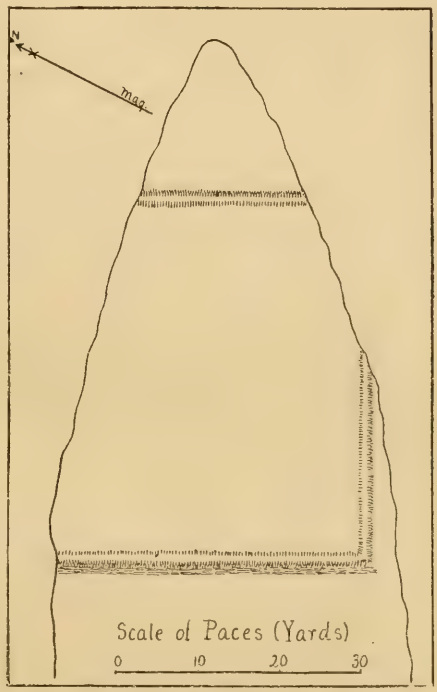
MAP NO. 31. SHEDIAC HARBOUR. From a chart.

5. *The Miramichi District.*

A.—Settlement of Richard Denys de Fronsac. This was the earliest French settlement on the Miramichi of which we have any authentic record, but its site is uncertain. Richard Denys was son of Nicolas Denys, who had settlements at Miscou and Nepisiguit. LeClercq speaks of having visited it before 1691, and St. Valier in 1688 speaks of it as "a little fort of four bastions formed of stakes, and in this fort a house where M. de Fronsac makes his residence" [p. 32]. As to its site, LeClercq gives us no help; but St. Valier says of it that it was on the River of Manne, at a league from that of St. Croix, and that near it ["pres de là"] is a place called, in the language of the Indians, *Skinoubondiche*, where were the three leagues of land given to the Recollets for a mission by M. Denys. There is no doubt as to the location

1 During my visit to Shediac I was under the impression that the maps marked the fort on the south side of the entrance to the Shediac, and hence made my inquiries there, and examined the point with great care. I did not look on the north side, but the residents, who took much interest in the inquiries, would hardly have failed to know of it were there any tradition of its existence.

of Skinoubondiche. As already explained it was at Burnt Church; hence Denys' settlement was near it, and perhaps at Burnt Church Point itself, where later was a considerable village. This point can, however, hardly be said to be at a league from the River St. Croix, the old French name of the Miramichi. If the River Manne could be located it would settle the point; but the name seems French, not Indian, and despite much search, I have not been able to identify it. Another hint as to its site is given us by LeClercq [p. 193], who speaks of spending a night at *Mirmenaganne*, four leagues from the fort of M. Richard de Fronsac. The only identification for this name I have been able to make is that it represents *Mool-mun-ok-un*, which, with the usual substitution of *r* for *l*, is not unlike it. *Mool-mun-ok-un* is the Micmac name of the Northwest Miramichi, and four leagues [about ten miles] from it would bring one to the forks at Beaubears Island.[1] On the northern bank here, just at the junction, the Jumeau map of 1685 places a flag, which may imply that the fort stood there, and a further confirmation is given to this site by the Franquelin-DeMeulles map of 1686 which names the little stream southeast of the present Beaubears Island, *R. de Mission* (Map No. 33). But this would hardly agree with St. Valier's statement that it was near Skinoubondiche, unless there were two places of that name.



MAP NO. 32. REMAINS OF THE FORT ON INDIAN ISLAND, SHEDIAC HARBOUR. From a plan by the Author, 1897. *Cross-lines are ramparts, lengthwise lines are ditch.*

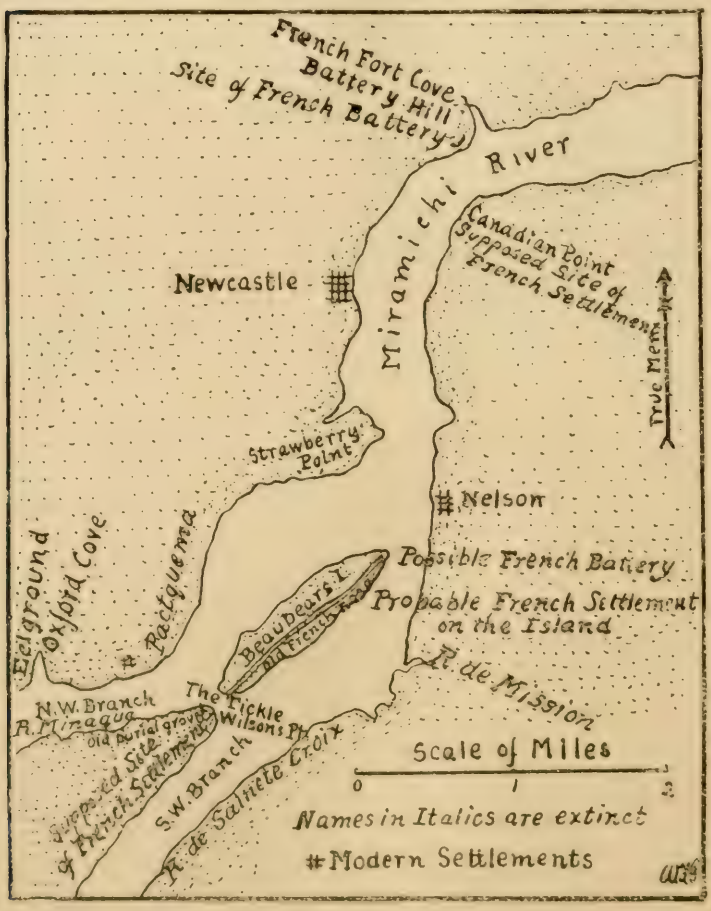
There is a tradition that his fort stood at Bay de Vin, at the point on the eastern side of the harbour [shown on map No. 10], but this would not agree with the statements of St. Valier. One might suppose that *Riviere du Cache*[2]

1 Nicolas Denys spent some days here before 1672, as he tells us in his Histoire (184), and describes what seems to be Strawberry Point, and speaks of the great quantity of "fraises and framboises" upon it.

2 On the origin of this word my Place Nomenclature is perhaps in error. The original survey map of 1754 applies what is apparently the original of this name to the Grand Dune Brook, where it appears as *amion caichi*, which on D'Anville is copied as *vieux Caichi*. Now, a fact I had previously overlooked, the Micmac name of Grand Dune Brook is *A-be-am-ketck*. This is so strikingly like *amion Caichi* that we can only conclude either that the latter is simply the French pronunciation of the former, or else that the Indians have kept the French name, pronouncing it as nearly as they can like the French, just as on the St. John they say *Poos hetk* for Boar's Head. The former is the more

[River of the hiding place] might be connected with it. The original river of this name seems to have been the Grand Dune, but there is really nothing to connect Denys with it.

B.—Bay du Vin. Traditions are given by Cooney as to the foundation of the Bay du Vin settlements in 1672 or 1673, but there is no historical evidence whatever for such statements. But relics dug up, cellars, and traditions all



MAP NO. 33. HISTORICAL MAP OF PART OF MIRAMICHI.

point to the existence of former French settlements at several points, though we have no evidence at all as to the dates of their formation. A very large settlement, with a chapel whose site is known, is said to have existed opposite Bay du Vin Island. Probably most of them were not earlier than 1750, about which time settlers began to leave the peninsula of Nova Scotia in some numbers.

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probable explanation, and it would make R. Du Cache simply a French familiarization of the Indian name removed to a new locality, and would upset my theory on page 223 of the Place Nomenclature. It is very puzzling.

Other remains are found on Bay du Vin Island. Creuxius' map of 1660 marks a settlement on the south side of the bay. Another early settlement was near what is still called French River Point (Map No. 10). The local tradition, as given me by a resident, is that this village pursued the dog-fish fishery for the sake of the skins, which commanded a good price in France, where they were used for polishing purposes.

C.—Beaubears Point and Island. There can be little doubt that here also was an extensive settlement, though we know nothing positively as to its origin. Probably, however, it too, if not formed about 1750, was at least increased about that time, and doubtless still more after the expulsion of 1755. Cooney places the settlement on Beaubears Point *i.e.* Wilsons Point (map No. 33), comprising a town of two hundred houses, a chapel and provision stores; but most of the remains of settlement known locally are on the island. An old road along its centre is considered locally to be French. Cooney states there was a battery on the eastern end of the island. In 1756 there were 3,500 French under Boishébert on the Miramichi (Murdoch, II., 312). Doubtless this settlement was destroyed by Wolfe's expedition of 1758. Local tradition states that the passage, called "the Tickle," is artificial, and was made by Boishébert. This is an error, for Jumeau's map of 1685 and Franquelin-DeMeulles of 1686 show it with perfect clearness.

D.—Canadian Point. The tradition is that here was a settlement of some importance. This is confirmed by a most interesting view made in 1758 by one of Wolfe's officers, published as a copperplate in London in 1768. It is entitled "A View of Miramichi, a French Settlement in the Gulf of St. Lawrence, destroyed by Brigadier Murray detached by General Wolfe for that purpose, from the Bay of Gaspe."[1] This view shows a settlement of four houses and a church on the left bank of the river, at a place which I can only identify as just east of the extremity of Canadian Point (map No. 33). M. Gaudet calls this point *la pointe acadienne*, of which *canadian* may be a corruption.

E.—French Fort Cove. Tradition places here an early battery, no doubt correctly. The battery must have stood on the western entrance to the cove, which is still called locally "Battery Hill," for the position is admirably adapted for the purpose (map No. 33). There is here a high bluff, and the channel of the river curves close to the shore, so that the command of the river from the bluff is perfect. In this respect it resembles the Battery Point and Point la Garde on the Restigouche, and no doubt there was a battery here to protect the important settlements above.

F.—Burnt Church Point. Here was no doubt a very important village, and this point on the fine survey map of 1754 is called "Pointe de Village." The Indian settlement and church were close beside it, and it was the burning of this church by the English in 1758 that gave it its name. The local tradition, as given by Cooney, is that it was burnt by the captain of a ship bearing the remains of Wolfe to England in reprisal for the murder of some of his men by the Indians, but it is much more likely that it was burnt by the expedition of 1758, above mentioned, which was sent by Wolfe for the express purpose of destroying the French villages on the Miramichi. As I have elsewhere pointed out, the tradition of the six murdered sailors may belong earlier, and explain certain place names in that region (Place Nomen-

[1] This view is published in the new illustrated edition of Parkman's "Montcalm and Wolfe" Little, Brown & Co.), which contains also a portrait of Boishébert.

clature, 223). This is, of course, the village mentioned by Smethurst in 1761. The village of Neguac, near by, is probably one of the Acadian settlements founded later in the century, though Cooney states that old French remains were visible there.

Tradition also places an early French establishment of Denys at Portage Island, used in hunting sea-cow or walrus.

A branch of the Lower Tabusintac is on the maps named *French Cove Brook*, probably indicating an early settlement.

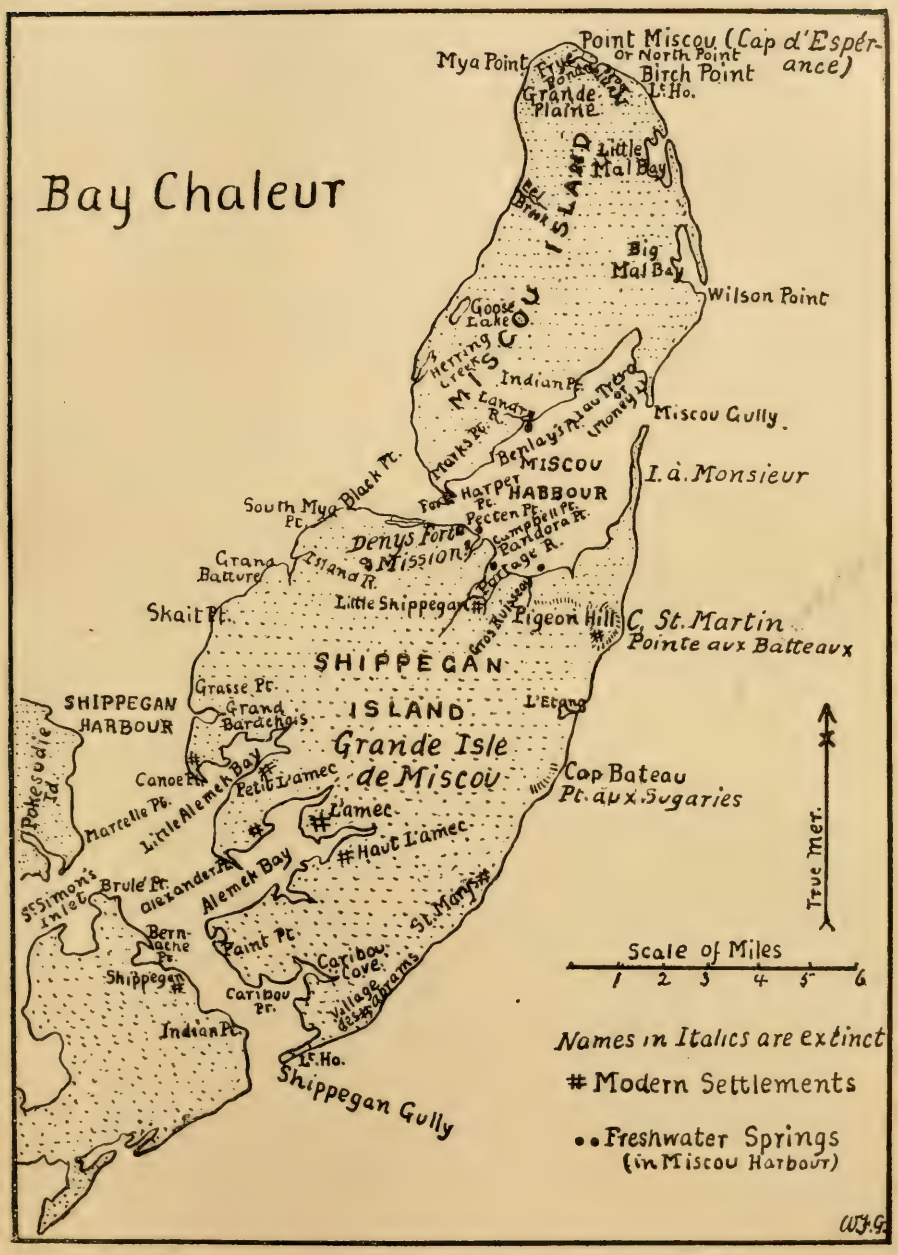
6. *The Nepisiguit District.*

In this region there were two principal centres of settlement, Nepisiguit and Miscou. Their early history has been most fully and clearly sketched by Dr. N. E. Dionne in his "Miscou" in Le Canada Français, 1889. Recently Rev. W. O. Raymond has written upon the same subject (in Collections, N. B. Historical Society, II., 81-134). A valuable detailed account of the settlements of Miscou in this century, with some traditions, is to be found in Perley's Report on the Fisheries of New Brunswick, 1852.

A.—The earliest settlement on Miscou must have been that of Raymond de la Ralde in 1623 (Dionne), who had a fishing and trading establishment there. Its site is unknown, but probably it was on Miscou harbour.

B.—Mission of St. Charles. In 1634 was founded the Jesuit Mission of Saint Charles at Miscou, which is frequently referred to in the Relations after that date. The site of this important mission is not positively known. The many references to it in the Relations give no hint of its site. Local tradition places it at *Grande Plaine*, near Mya Point, at the north end of Miscou Island (see map No. 34), but there seems to be little basis for this view, and in all probability it is an error. It was much more probably on Miscou harbour, and there are two reasons for this belief. First, as the mission was for both Indians and the numerous French fishermen, it would have been near where the French could use it. At *Grande Plaine*, there is no harbour whatever for vessels, but only the open sea, the most exposed of positions, where vessels could lie only in the calmest weather. On the other hand, Miscou harbour is a good harbour for vessels, and has been used by fishermen in great numbers from the earliest times down to the present day. It was while their vessels were at anchor in safety that the sailors could attend a mission. Second, Father Richard in the Relation of 1645, speaks of a sea voyage from Nepisiguit to Miscou, and remarks especially on the danger he met through finding Miscou harbour blocked with ice. Had his destination been the north point of Miscou the blocking of the harbour would not have concerned him so much. If it was on the harbour, however, we do not know its exact site unless it was on the same site as the settlement of Denys, next to be spoken of (map No. 34).[1] This is quite probable, since no other important ancient site is known about this harbour, except, perhaps, I. au tresor or Money Island, on which many coins and other relics have been found. The latter may possibly be the *I. a monsieur* of Jumeau's map of 1685. The low shores of this harbour do not offer many favourable

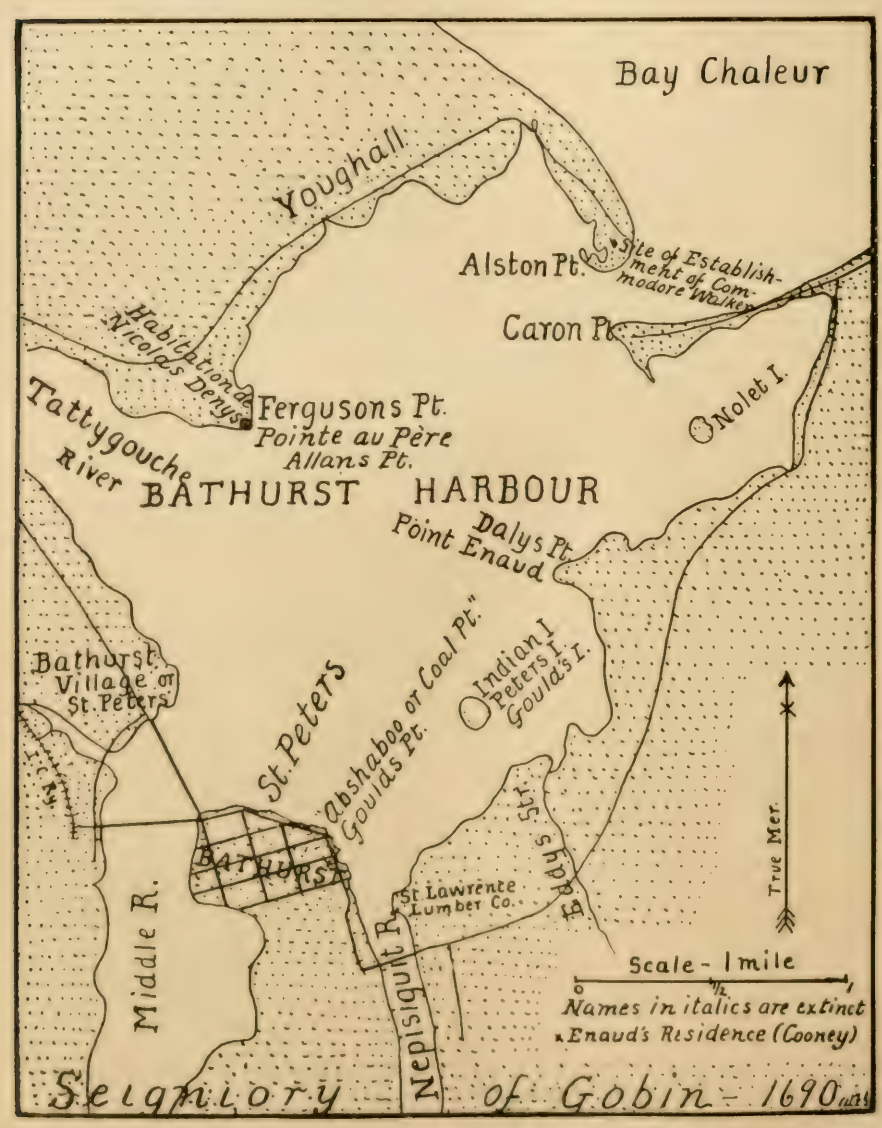
[1] The freshwater springs shown on this map are described by Denys.



MAP NO. 34. HISTORICAL MAP OF MISCOU AND SHIPPEGAN.

sites for settlement, and a good situation is likely to be occupied by many settlements in succession. That this site was on what we now call Shippegan is not the least objection, since, until after 1700, both islands were called Miscou, one the Grande Isle de Miscou, the other Petite Isle de Miscou. The mission had a branch at Nepisiguit and was abandoned about 1662.

C.—Denys' Settlement on Miscou Harbour. Denys, in his work of 1672, tells us with the greatest clearness of his settlement on this harbour, on the south



MAP NO. 35. HISTORICAL MAP OF BATHURST HARBOUR.

side, where he had a "habitation" and garden.[1] In another place he speaks of passing through the harbour of Miscou from the eastern entrance and coming to a long point of sand which makes a cove of considerable extent, and there it is that vessels anchor. This must have been either Harper's or Sandy Point (southwest of Harper's), and the inference is that his settlement was near it. The site of Denys' settlement is well known locally, and until a few years ago traces of it could be seen, including the remains of an "old fort," which now are entirely washed away. It was at Pecten Point, in the place marked on map No. 34.[2] This site has been identified for me by Rev. Father J. R. Doucet, to whom I am indebted for much information upon the history of the island, and it is thus spoken of by Dionne (p. 518):

"On voyait encore sur cette île, il n'y a pas plus de 5 ou 6 ans, les ruines de l'habitation et des fortifications anciennes élevés par Denys. Le fort était situé du côté sud du havre de Miscou, vis-à-vis le principal établissement de l'île, occupé il y a plus de deux siècles par les Français, et habité aujourd'hui par un groupe Écossais. L'on peut encore voir le vieux cimetière, sur la propriété d'un nommé John Marks. Les protestants ont construit, a proximité, une église de leur secte."

Passing next to the settlements at Nepisiguit, we find them in the following order.

D.—The Recollet Mission at Nepisiguit. LeClercq states of this place (p. 203): "Les Recollets de la Province d'Aquitaine y ont commencé la Mission en 1620 & le Pere Bernardin, un de ces illustres Missionaires mourut de faim & de fatigues en traversant les bois pour aller de Miscou & de Nipisguit à la riviere de Saint Jean, à la Cadie, ou ces Reverends Peres avoient leur établissement principal." As to the site of this mission, we have no hint whatever.

E.—The Jesuit Mission at Nepisiguit. This was established in 1644 as a branch of the mission of Miscou. It is several times referred to in the Relations, but never in a way to locate it. LeClercq states there was a chapel here. Dionne states positively, though without giving any evidence, that this chapel was at Point au Père, and that Denys settled near it. A slender argument for this might be based upon the fact that old plans mark Ferguson's Point, where Denys' settlement later stood, "Point au Père, so called because a French priest is buried there," (Map No. 35), and there is a local tradition, given, however, without qualification by Dionne, that some years ago the remains of priests were removed from this point to the cemetery at Bathurst. Rev. Father Varrily, however, writes me there is no mention of any such removal in the Church records, nor does he know of it. He says, however, there is a tradition that the Jesuit Fathers had some kind of an establishment there. He says further, "It is, however, certain that on the south side of the harbour, at the mouth of the Nepisiguit, there was at the first discovery of the country an Indian settlement, and that a French gentlemen named Enaud, who married an Indian, owned property and lived there. This place was visited regularly by the Jesuit fathers established at

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[1] The date of the foundation of this settlement is probably fixed by a note in the Journal of the Jesuits of 1652,—"Monsieur Denys goes to find Monsieur de la Tour, in order to establish himself again towards Miscou."

[2] Many relics have been found on this site. Of these one is a pewter pitcher, having the date 1601, a photograph of which I possess through the kindness of Dr. Philip Cox, of Chatham. It is said locally that the fort stood exactly where Mr. Petrie formerly had his store. (See New Brunswick Magazine, II., 293.)

Miscou." There must be some error in the latter statement, for Enaud, who was living here in 1686, is returned by the Census as 35 years old, and the Miscou Mission was abandoned about 1662. Creuxius' map of 1660 places the settlement west of the Nepisiguit, but this probably has little significance.

F.—Nicolas Denys' Habitation at Nepisiguit. Denys, in his work of 1672, thus writes: "Mon habitation de Nepigiguit est sur le bord de ce bassin; à un lieuë à la droit de son entrée de basse mer un canot n'en sçauroit approcher: c'est où j'ay esté obligé de me retirer aprés l'incendie de mon Fort de saint Pierre en l'Isle du Cap Breton. Ma maison y est flanquée de quatres petits bastions avec une palissade dont les pieux sont de dix-huits pieds de haut, avec six pieces de canon en batteries.....j'y ay un grand jardin"[1].....This description placing his habitation on the border of the basin a league from the entrance on the right, with great shallows in front, would locate it on Ferguson's point exactly where tradition places it (See Map No. 35). Here many relics of early occupation have been found, cannon balls, gun locks, skeletons (near by), and even quarried stone. The spot where the latter occurred was on the point in a place now washed by the highest tides, and it is probable that here was the habitation and that this site, like so many settlement and fort sites in the province, has been much altered by the action of the waves, allowed by a slow sinking of the coast, which is now going on. Old willow trees on the point are said by tradition to mark the graves of priests and a French admiral.

G.—Enault's Settlement. A number of traditions of Esnault (Enault or Enaud) are given by Cooney, which are probably fairly trustworthy, except as to dates. The census of 1686 returns Enaud as living at Nepisiguit. Cooney says that he lived at Abshaboo or Coal Point, at the mouth of the Nepisiguit, where Packard's hotel is, and that he had his principal establishment where Mr. Deblois has his. Coal Point is a corruption of Goold's Point,[2] by which the high point on the west side of the mouth of the Nepisiguit is known on many early plans. Packard's Hotel, a stone building, still stands at the corner of Black and St. Patrick streets in Bathurst, while DeBlois' establishment was near by on Gayton's wharf, near the foot of St. Patrick street.[3] Certainly this would seem to be the most favourable place around the harbour for a trading establishment; it is on high land at the mouth of a river much used by the Indians as a highway to the hunting grounds of the interior, and as a through route of travel to other rivers. If Enaud, or a predecessor[4] was in possession of this point when Denys arrived, it would explain why Denys chose what seems to us in all ways the much less favourable situation at Ferguson's Point. Cooney states also that Enaud had a large grist mill on the stream running through the marsh now owned by Mr. Deblois, which stream, as Dr. Duncan tells me, is that now

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LeClerc (24) speaking of Denys' habitation as he saw it in 1675, says "L'Habitation de Monsieur Denys.....qui étoit trés bien logé, sur le bord d'un bassin vulgairement appellé la Petite riviere, separé de la mer par un belle langue de terre, qui par l'agrément merveilleux qu'elle donne à ce lieu le rend un sejour fort agréeable." This mention of Little River might lead one to suppose it was on the border of the present river of that name, west and southwest of Bathurst, but such a supposition would by no means fit with the other facts we have. It is just possible the Teteagouche was the *Petite Riviere* at that time.

[2] Accidentally misspelled *Gould's* on Map No. 35.

[3] For these facts I am indebted to Dr. G. M. Duncan, of Bathurst.

[4] It is possible there were two men of this name at Nepisiguit, father and son. Cooney mentions Jean Jacques Enaud, while Phillipes Esnault, Sieur de Barbaucannes, is mentioned by LeClercq, and he is mentioned as receiving a grant at Pokemouche in 1693.

known as Eddy's stream (Map No. 35), and he adds further that the stones of the mill were found not long ago on this stream. A fact which has an important bearing upon the site of Enaud's settlement is, however, this, that a point on the harbour is still called, locally, by his name, Point Enaud, though on the chart it is called Daly's Point. This persistence of his name must indicate very close connection between him and this locality.

Enault is mentioned by LeClercq with much praise. They went together in winter from Nepisiguit to Richard Denys' settlement at Miramichi, nearly perishing on the road.

It is probable that from the time of Denys onward there were Acadian settlers about this harbour in small numbers, and that in common with other desirable locations on the north shore it received large additions to their numbers after 1750, and still more after the expulsion. In 1761 Captain Mackenzie was sent to remove them, and took prisoners there, no less than 787 (Archives, 1894, 229).[2] The registers at Caraquette, according to Mr. Gaudet, show there was a number of settlers here in 1772, and these settlers no doubt took up lands which were afterwards granted to them. It is thus hardly possible to assign any date to the foundation of St. Peters, as it was called until 1826, when it was named Bathurst by Sir Howard Douglas.

The later history of Acadian settlements in this region was no doubt very similar. Thus, Caraquette was granted in 1784 to 34 Acadians who had doubtless been some time on the lands. Tracadie was first settled, according to M. Gaudet in 1785, and Pokemouche and Petit Rocher both in 1797.

7. *Restigouche District.*

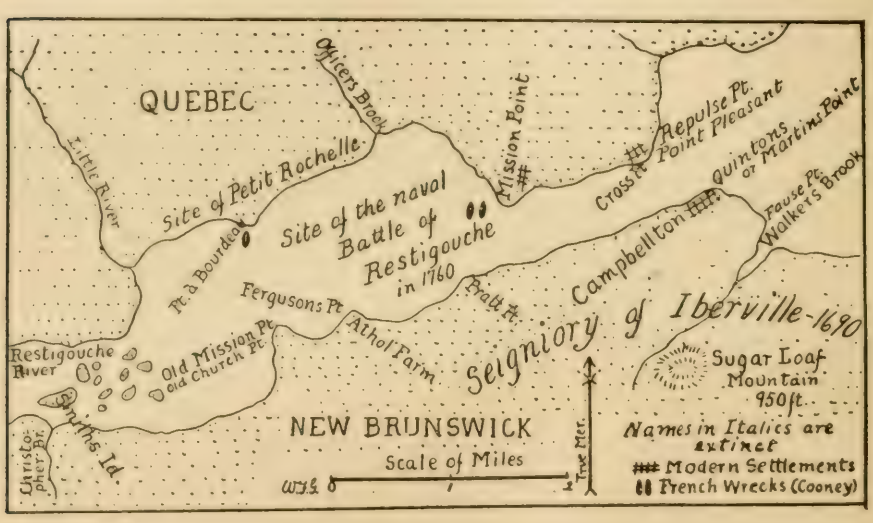
So far as I have been able to find, there are in this district no records of French settlements, other than the French mission to the Indians, before 1700. The Recollet Mission was at Old Mission Point, as already discussed. After 1750 the settlers came to this region in considerable numbers and founded the town of *Petit Rochelle*, on the Quebec side, protected by batteries at Point LeGarde and Battery Point. It was in the basin above Mission Point that the battle was fought between an English squadron, under Captain Byron, and a French squadron, which resulted in the destruction of the latter and of Petit Rochelle and the batteries. A very interesting memorial of this event is on the French chart of Restigouche of 1779, copied from an earlier English one, which gives the names of all Byron's ships to different points and shoals along the river. Cooney gives the official accounts of this battle, and it has

[1] Dionne thus speaks of him, "Quant à Phillippe Enault de Barbaucannes, qui après la révocation de la concession faite à Denys en 1654, obtint le fief de la rivière de Nipisiguit, contenant six milles carrés, il se construit une maison du côté sud du havre vis-à-vis la Pointe-aux-Pères. L'emplacement de cette résidence se trouvait environ cinq cents pas de la côte sur la terre qui a autrefois appartenu à Andrew Ramesay un peu plus d'un mille à l'est des scieries à vapeur du St. Lawrence Lumber Co. Enault avait un moulin à farine près de la côte sur le ruisseau qui traverse la terre de John Miller à un quart de mille des susdites scieries." Dr. Dionne considers that Cooney was mistaken in locating the settlement where he does. I do not think Enaud had a seigniory at Nepisiguit, as there is no mention of it in the documents of the time. but he had one at Pokemouche. (See later under Seigniories.

[2] Also mentioned in Smethurst's Narrative.

been treated fully in the Educational Review, X., 1897, 194. The site of Petit Rochelle is well known locally; it extended from Officers Brook upwards for some three miles, and many relics of French occupation have been found here. (Map No. 36.) Cooney states there was a French village at Martins Point, near the site of Campbellton, and he gives many facts and traditions as to French relics found in this region (213-218).

At the mouth of Jacquet River, and doubtless of other rivers on the North Shore, are small pieces of marsh which seem to have been dyked;



MAP NO. 36. HISTORICAL MAP OF RESTIGOUCHE.

and these dykes are taken locally to be evidence of early Acadian settlements. Such dykes, however, are known to geologists to be often the result of purely natural causes (Chalmers, Geological Reports, 1895, M, 133), and hence do not prove the existence of former settlements unless certainly artificial.

2. SEIGNIORIES.

An interesting chapter in the history of the Acadian period in New Brunswick is that which relates to the effort of the French Government to settle it upon the Seigniorial system. The subject has, however, received but little attention from our historians, no doubt because it was a failure and produced no effect whatever upon later settlement. Not a single one of the many seigniorial grants made in New Brunswick survived the Acadian period itself, much less did they extend into the later periods, and not a foot of land is held to-day in New Brunswick, nor has been held since 1755, by descent from a seigniorial title. This extensive attempt was there-

fore another of those barren branches of which history has so many, one whose interest must be chiefly sentimental, and whose details may be omitted altogether in any work which attempts to follow the line of evolution of present-day conditions.

It is of course entirely outside the scope and limits of the present work to discuss the history of the seigniorial system and of the New Brunswick seigniories; properly we are concerned here only with their locations. A copious literature upon the subject arose in connection with the discussions leading to the buying out of the rights of the Seigniors of the Province of Quebec by the Quebec Government in 1854, and there are many easily-obtainable reports printed at that time in both English and French, some of which contain valuable reprints of the Acadian seigniorial grants. Particularly valuable upon the historical aspects of the subject is "The Seigniorial Tenure in Canada and Plan of Commutation," by J. C. Taché, Quebec, 1854. The general subject is treated in synopsis in vol. iii. of the recently issued "Canada, An Encyclopædia," to which the reader interested in the subject will do well to turn. There is also a "Histoire du droit Canadien" (Montreal, 1888), dealing with this subject, but I have not seen it. I shall here give but a few leading facts connected with the origin and fate of Acadian Seigniories.

A seigniorial grant gave to the Seignior and his heirs forever the title to their lands, with the right of fishing, hunting, trading and the administration of justice to their tenants, and they had to render homage to the representatives of the King at Quebec at stated periods. They were required to settle colonists upon their lands within a fixed time and in certain numbers, to keep rivers open for navigation, to open highways, and to observe other legal conditions. In addition to the seigniorial grants, usually very extensive, there were other property grants, giving the grantee the right to farm, hunt, trade, etc., but no rights of justice over tenants. Of the latter sort were the small grants of Meusnier at Magaguadavic and Des Grez at Pokemouche later to be spoken of; while all of the remainder of the grants in New Brunswick were true seigniories.

In 1627 Louis XIII. granted all New France in fief and seigniory to the Company of New France, which resigned its rights in 1663, and between those dates the Seigniories were granted by the Company. In 1664 Louis XIV. granted all his land in America to the Company of the West Indies, but their rights reverted to the Crown in 1674, after which date all seigniories were granted by the representatives of the King at Quebec, the Governor and Intendant, and were later confirmed by the King himself. This original grant by the authorities at Quebec, and its later confirmation by the King, gave origin to two distinct documents describing each grant, and as these by no means always agree in details, much confusion has arisen in connection with some of them; and thus are explained the discrepancies in different records describing the same seigniory.

The first great grant in New Brunswick was that to DeRazilly at St. Croix in 1632, then followed that to LaTour on the St. John in 1635, that of 1636 and 1653 to Denys, including all the North Shore, and that to LaTour, Temple and Crowne in 1656. But in 1672 began the series of seigniorial grants in New Brunswick, whose locations are described in the following pages. The last of these, excepting that of St. Pierre, which was on a somewhat different basis, was made in 1700. They were some thirty-five in number, covering some of the best lands and the localities best situated for fishing and trade in the Province. In the great majority of cases, however, no attempt whatever appears to have been made by the Seigniors to fulfil the conditions and settle upon them, in which respect they were in remarkable contrast to those of Quebec. At Passamaquoddy there is evidence from the censuses and other sources that St. Aubin, Chartier and Meusnier settled upon their grants; on the St. John the two brothers D'Amours, the Sieurs de Freneuse and Clignancourt, later joined by their brother Sieur de Chauffours, made more or less successful attempts at settlement, as did Martignon, Soulanges and possibly Breuil and Gautier, but there is no evidence that any of the other Seigniors ever even saw their grants. At the head of the Bay of Fundy, La Vallière had a seigniory on which many colonists from Port Royal settled as his tenants, and thus he established by far the most important seigniory in the present Province of New Brunswick, and one that came the nearest to the ideal for which the seigniorial system was established. It is possible, that, had it not been for the troublous times in that region after 1750, ending with the expulsion in 1755, the heirs of La Vallière might have held lands under his title to this day. Along the Richibucto coast Sieur de Chauffours had formed a settlement before his grant was passed, but later he abandoned it to join his brothers on the St. John. At Miramichi Richard Denys de Fronsac made a settlement, but Enault, though he had a seigniory at Pokemouche, lived on lands belonging to Gobin at Nepisiguit, and De Grez, after making some settlement at Pokemouche, deserted to the English. The attempts at settlement, therefore, were altogether insignificant in comparison with the number and extent of the seigniorial grants. After 1700 there is, with the single exception of La Vallière, hardly a trace of any of the Seigniors to be found. In 1704 Colonel Church ravaged Passamaquoddy and the Seigniors are never heard of again in the region, and probably the destruction of the settlements along the river by the English expedition against Fort Nashwaak in 1696,[1] had something to do with the abandonment of the St. John. As for those on the North Shore, Seigniors and Seigniories alike fade away into obscurity and leave scarcely a trace. It is said by Murdoch that most of the Seigniors left the country after Nicholson's conquest (1710), and no doubt most of them went to Quebec where some of them were later granted seigniories in that Province. Even had they

[1] That at Jemseg was not destroyed, and Gyles in his narrative tells us why.

not been abandoned by their owners, most of the seigniories, perhaps all except La Vallière's, would have been forfeited for non-fulfilment of conditions. In 1699 the King decreed that since many of the Seigniors had not complied with conditions, they must send copies of their grants to him, and in 1703 a royal decree was passed which must have annulled most of the grants in what is now New Brunswick. After 1713 both English and French claimed the territory now known as New Brunswick. In 1718 Father Loyard was empowered to grant lands on the St. John to Acadians, but we do not know to what extent it was done. In 1734 the Lords of Trade wrote from Whitehall concerning seigniories in Nova Scotia, that all Seigniors who remained in the Province at the treaty of Utrecht (1713) and owned allegiance to Great Britain, could keep what they were legally possessed of before that time, but those who had left the Province and since returned could have no such rights. In 1743 the King of France decreed that all lands unsettled should revert to the Crown. In 1759 the Nova Scotia Legislature passed an act to the effect that any action to recover lands based on a French title should be dismissed. The final disappearance from history of the New Brunswick seigniories does not, however, come until the middle of the last century, when the brothers and sister Rey-Gaillard, heirs of Denys de Fronsac, claimed the seigniories formerly held by him, including his own of Miramichi and those of Nepisiguit and Restigouche, acquired by him from Gobin and Iberville, and attempted to collect rents from the fishermen and traders resorting there. Finally they sold their rights to a Mr. Bondfield of Quebec, who in 1764 claimed these lands from the Nova Scotia Government,[1] but was referred to the ordinance of 1759, with which the matter ended, and the last vestige of the seigniorial tenure in New Brunswick vanished.

The location of the majority of the seigniories is so fully described in the grants, there can be little doubt as to their position, and they are laid down on the accompanying map No. 39, in which dotted lines are used wherever boundaries are doubtful. The names of seigniories are in heavy square letters. The accuracy with which the bounds are described shows that they must have been granted from the descriptions of those who knew the localities, for the descriptions are far in advance of the general geographical knowledge of the times. There is no map of the entire Acadian period which shows the St. John river with any approach to the completeness and accuracy of geography displayed in the wording of the grants.

It is a matter much to be regretted that the names of the seigniories have all become extinct, for many of them are vastly finer names than many which have succeeded them. It would be an excellent plan as new names are needed for settlements or parishes to revive these old names, pleasing as they are, and connected with our early history. It would, of

[1] Murdoch, II., 441.

course, be best to apply them to localities near to where they originally belonged, and their location may easily be found by comparing the accompanying map No. 39 with a good modern map. About Passamaquoddy there are thus available *Razilly*, *St. Aubin*, *Chartier* and *Perigny*; on the St. John, are *Clignancourt* (or in its early English form, *Cleoncore*) *Bellefond*, *Vilrenard*, *Soulanges*, *Freneuse*, *St. Denis*, *Marson* (another title for Soulanges), *La Tour*, *St. Castin*, *Valence*, *Martignon*, *Breuil*, *Plenne*, and *Joibert*; at the head of the Bay of Fundy are *La Vallière* and *Villieu*; on the North Shore, *Denys*, *St. Paul*, *Linoville*, *Duplessis* and *Chauffours*; at Miramichi is *Fronsac*, and in Gloucester, *Enault* (or *Enaud*) and *Gobin*, and at Restigouche *Iberville*. Such names are surely vastly to be preferred to the very trivial ones so often given to our new settlements.

I think it probable the following list contains nearly all, perhaps all, of the seigniorial grants made in New Brunswick, but of many of them the printed records are very scanty, and in others the different versions differ considerably, especially in the spelling of the place-names. It is therefore very desirable that a full collection of them should be made from the original documents, and when possible, from the original registers at Quebec. This will be the more profitable since the grants already published in full often contain valuable incidental references to local history, which leads us to believe that those published only in part may in the complete original also contain important items.

The published descriptions of seigniories occur in the following works: First, in the Memorials of the English and French Commissaries of 1755 (cited in the following list as *Mem.*), in which some of our most important ones are published in full. Second, in various documents issued by the Quebec Government in 1852-54. The principal one of these is "Titles and Documents relating to the Seigniorial tenure in return to an address of the Legislative Assembly," 1851, Quebec, 1852 (cited as *Leg.*) The "Return to an address of the Legislative Assembly for copies of certain Seigniorial Documents 1853," contains many confirmations of Acadian Seigniories given in full. There is also a valuable Legislative document of 1807 or 1808 with titles in brief. There are several others in the "Manuscrits relatif à L'histoire de La Nouvelle France" (cited as *Docs.*) published by the Quebec Government; but this work contains many misprints, and the copies in the Ben Perley Poore collection in the Massachusetts State House are more accurate, though of course even these are copies of the originals in Paris. Murdoch's Nova Scotia also contains translations of parts of many of the grants.

In the following list the limits of space allowable have made it necessary to give only the description of the location of the grants, in selecting which from the several versions, often differing considerably from one another, I have chosen that which seemed to me to be most trustworthy, i.e. derived most directly and with most care from the original

documents, and I have quoted this exactly just as printed, whether in English or French. All of those in English are either from Murdoch or from the Legislative document of 1852. All are shown on the accompanying map No. 39.

1. *The Passamaquoddy District.*

The Seigniories of this region have been described and discussed in the "Courier Series," and in the pamphlet abstract of this, printed but not yet published.

At Indian Island one LaTreille lived at the time of Church's expedition of 1704, but no grant to him is known. The Hutchinson papers of 1688 (Collections Mass. Hist. Soc., 3rd ser., I., 82) mention a grant to one Zorzy [De Sorcis] at St. Croix, but nothing further is known of it.

1632—Saincte Croix. To M. le Commandeur de Razilly, Lieutenant Général pour le Roi en la Nouvelle France. (19th of May, from La Compagnie de la Nouvelle France.)

"L'étendüe des terres & pays que ensuivent, à sçavoir la rivière & baie Saincte-Croix, isles y contenues, & terres adjacentes d'une part & d'autre en la Nouvelle France, de l'étendüe de douze lieües de larges, à prendre le point milieu en l'isle Saincte-Croix, ou le Sieur de Mons a hiverné, & vingt lieües de profondeur depuis le port aux coquilles, qui est en l'une des isles de l'entrée de la rivière & baie Saincte-Croix, chaque lieües de quatre mille toises de long." (Mem. 707.)

The limits of this grant are plain (see map No. 39).

Port aux Coquilles is known to be Head Harbor, Campobello.

1684—Passamaquoddy. To Jean Sarreau de St. Aubin. (On June 23th.)

"Five leagues in front, on the sea shore, and five leagues in depth inland at a place called Pascomady, and its environs, with the isles and islets in front of that extent, also an islet of rocks about six leagues off for seal fishery, also the island called Archimagan, and the islets for two leagues round it." (Murdoch, I., 163.)

The description is not full enough to locate this seigniory exactly. It is possible that it included Campobello, and the ruined building shown on Windmill Point in DesBarres' picture of Campobello of 1777 may represent his dwelling, which, like those of other seigniors of the time, was probably a "Habitation," i. e., a dwelling surrounded by a stockade. It is much more probable, however, that the "Fort" mentioned at Pleasant Point (see earlier, Settlements) by Morris was the remains of St. Aubin's Habitation. If, however, the Gourdon mentioned by Church was found on the site of St. Andrews in 1704 and was really St. Aubin, it would perhaps show that his dwelling was there, which would be supported by the fact that Chartier's grant, including without doubt the falls at St. Stephen, is described as bordering upon St. Aubin's grant. Archimagan was an island near what is now Edgemoragan Reach, at the mouth of the Penobscot, and St. Aubin's sons resided there.

1691—Magaguadavic. To Jean Meusnier, habitant de l'Acadie. (July 16th.)

"Two leagues in front by two leagues in depth, on the small river which the Indians call Maricadéoüy, to wit: one league in front on each side of the

said river, opposite to each other, the said two leagues of land in front and two leagues in depth to be taken in the unconceded lands at a distance of about five leagues below Pesmoucady, running towards the north-east." (Leg. 121.)

This grant, not a grant in seigniory, but an ordinary grant "en censive," cannot be located more definitely than that it probably included the mouth of the Magaguadavic. The grant mentions that his former property had been plundered and burnt by the British, and a new grant is made to enable him to settle in a safer place. The basin at the Falls, at St. George, where there is fertile land, grand fishing, and the head of navigation, would be a most likely place for his residence.

1693—Grand Manan. To Paul Daillebout, Ecuyer, Sieur de Perigny (or Persigny). (April 14.)

"The said island of *Grand Menane*, together with the islands, islets and beaches which may be found lying around and near the same." (Leg. 134.)

The location of this Seigniory is perfectly clear (see map No. 39).

1695—Scoodic. To Sieur Michel Chartier, habitant de l'Acadie. (July 8, confirmed May 19, 1696.)

"D'une demy lieue de front de chaque costé de la rivière d'Escoudet sur une lieue et demye de profoundeur à commencer du costé du sud ouest à la terre du dit Sieur St. Aubin en descendant la dite rivière, et du costé du N. E. aux terres non concédez, vis-a-vis la concession du Sr. de Bourchemin, sur la rivière de la Oumasca. (Docs. II., 224. Also Leg. 154, Murdoch, I., 224.)

The location of this seigniory is fairly plain. Church, in 1704, found one Sharkee, of course Chartier, settled on or near the site of St. Stephen, on the Scoodic, which was doubtless the centre of his Seigniory.

In 1696 Michel Chartier leased the Seigniory of Freneuse from its owner, Mathieu D'Amours. (See later.)

The Seigniories of Thibaudeau, 1695, and of Villeclaire, 1697, and Kouésanoukek (Lefebvre), 1703, and Grand Champ, 1708, were in Maine, towards Mount Desert.

2. *The St. John District.*

No systematic account of the Seigniories of the St. John has yet been published, though many references to them occur scattered through the writings of Hannay, Raymond and others. Most prominent of the Seigniors of this valley were the brothers D'Amours, of whom an account is given by Hannay in the New Brunswick Magazine, I., 25.

1635—Mouth of the St. John. *To Charles de Saint-Etienne, Sieur de la Tour,* (Jan. 15, by La Compagnie de la Nouvelle France.)

"Le fort & habitation de la Tour, situé en la Rivière Sainte Jean en la Nouvelle-France, entre les 45 & 46, degrés de latitude, ensemble des terres prochainement adjacentes à icelui dans l'étendüe de cinq lieües au dessous le long de ladite rivière, sur dix lieües de profondeur dans les terres." (Mem.)

The location of this grant is fairly plain. It probably covered both sides of the mouth of the river. It was, of course, later superseded by other grants. It is no doubt that mentioned by Murdoch (I., 79), as obtained from the French King in 1627.

1656—Coasts of Acadia. *To le Seigneur de Saint-Etienne, Sieur de la Tour, baron d'Ecosse, Thomas Temple & Guillaume Crowne, Chevaliers.*

"Le pays & territoire appellé l'Acadie, & partie du pays nommé la Nouvelle Ecosse, . . . les côtes jusqu'au fond de la Baie; & de là, rangeant ladite Baie jusqu'au fort Saint-Jean; & de là, rangeant toute la côte jusqu'à Pentagoet . . . & en dedans les terres tout le long desdites côtes jusqu'à cent lieües de profondeur." (Mem.)

This enormous grant can readily be located from the description. It is shown plainly on a map in Winsor's "America," V., 478.

1672—West Side of the Mouth of the St. John. *To Martin D'Arpentigny, Sieur de Martignon.* (Oct. 17th).

"The tract of country and lands which are to be found on the said River St. John, to be taken along the said River from Partridge Island (*l'Isle de la Perdrix*), running six leagues in front up the said river, and six leagues in depth inland, bounded in front by the said River St. John, and in rear, towards the west, by the ungranted lands, on one side by the said Island, and on the other by the ungranted lands." (Leg.)

The location of this Seigniory is plain. (See map No. 39, also 37.) On the Franquet map of 1707 (in Marcel's Atlas) *Fort de Martinnon* is marked on the west side of the harbour, and Fort La Tour on the east. In the census of 1686 his name is spelled Aprendistigué. The document states that he intends to bring over men from France to settle his land. In a French copy of this grant he is spoken of as "ancien habitant du pays de l'Acadie," and also as "Gouverneur et proprietaire de la Rivière St. Jean dupuis la Rivière de Maquo jusqu'aux mines aux dit païs de l'Acadie . . . plus de 50 lieues de front."

This doubtless indicates a grant, now unknown, from his father-in-law, La Tour. Its location would seem plain;—*R. de Maquo* is probably Maquapit, and *les Mines* the mines at Newcastle, thus placing it along the north shore of Grand Lake, though I cannot explain the 50 leagues of length. (Map No. 39.)

1672—Long Reach. *To Jacques Pottier, Sieur de St. Denis.* (Oct. 18.)

"An extent of two leagues in front, to be taken above the grant made to the Sieur de Martignon, and bounded on the other side by the ungranted lands." (Leg.)

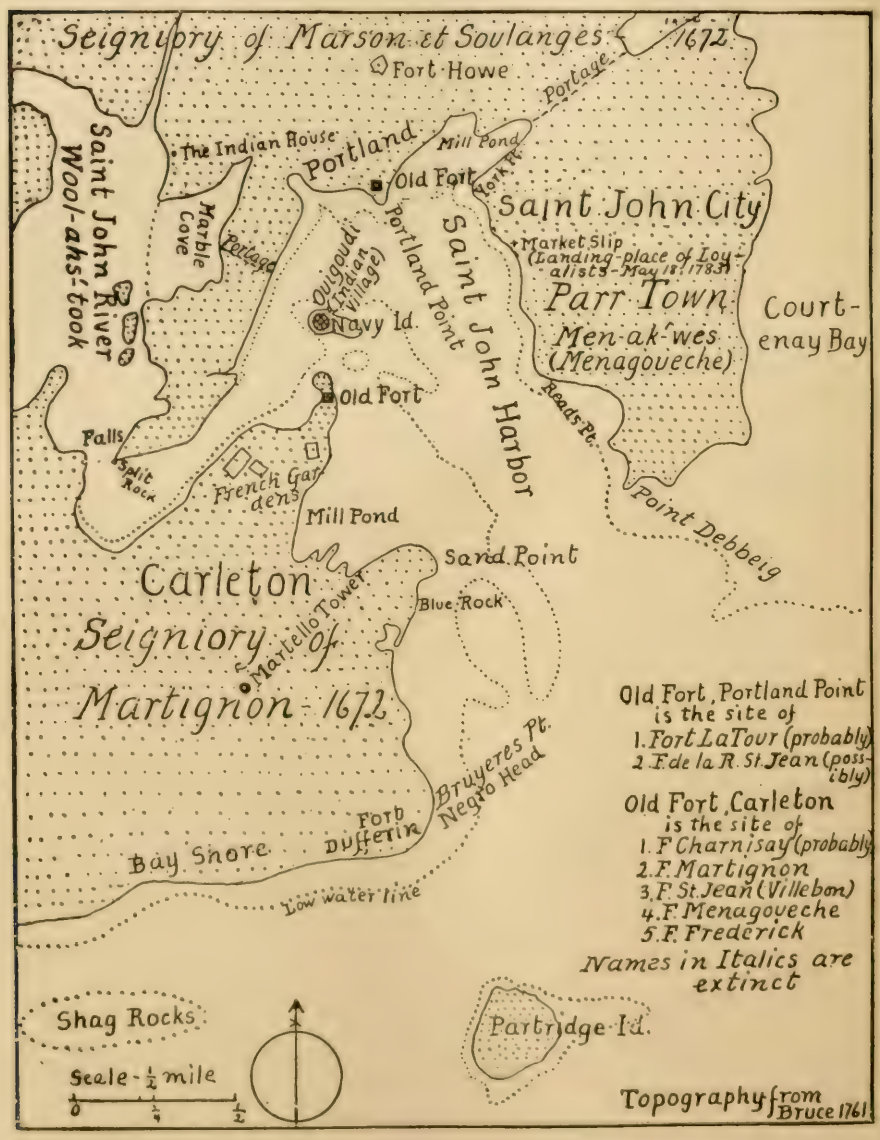
Its location is plain. (See map No. 39.)

1672—East Side of the Mouth of the St. John. *To [Pierre de Joibert] Sieur de Marson [et] de Soulanges.* (Oct. 20th.)

"A tract of land of four leagues in front by one league in depth, to be taken on the east side of the said River St. John, bounded on one side by the basin of the said river and on the other by the ungranted lands (together with the house of Fort Gemeziz, which he shall enjoy for such time only as he shall hold his commission of commander on the said river, in order to give him a place of residence, that he may act with more liberty and convenience in everything relating to the King's service)." (Leg.)

That this seigniory was at the mouth of the river is shown by the fact that the one granted his brother on the same date adjoined it and bordered on the sea, and it therefore occupied the position assigned to it on the map No. 39. That Jemseg Fort was allowed him as a residence seems to show that there was no residence for him at St. John. Martignon, of course,

occupied the fort at Carleton built by Charnisy. Yet in both his grants of 1676 Marson is spoken of as "Commandant of the Forts of Jemseg and the River St. John," implying that there was somewhere a fort of the River St. John, but not in condition to be occupied. This would fit perfectly with the theory given earlier that Fort LaTour, destroyed by Charnisy, stood at Portland Point on his Seigniory, (Map No. 37.)



MAP NO. 37. HISTORICAL MAP OF ST. JOHN AND SURROUNDINGS.

1672—St. John Harbour. *To Sieur de Joibert.* (Oct. 20.)

"The extent of one league of land in front, by one league in depth, to be taken on the east side of the River St. John, in the said country of Acadia, adjoining on the one side the grant made to the Sieur de Marson, his brother, commanding at the said place, and on the other side the ungranted lands, bounded in front by the sea, and in rear by the ungranted lands." (Leg.)

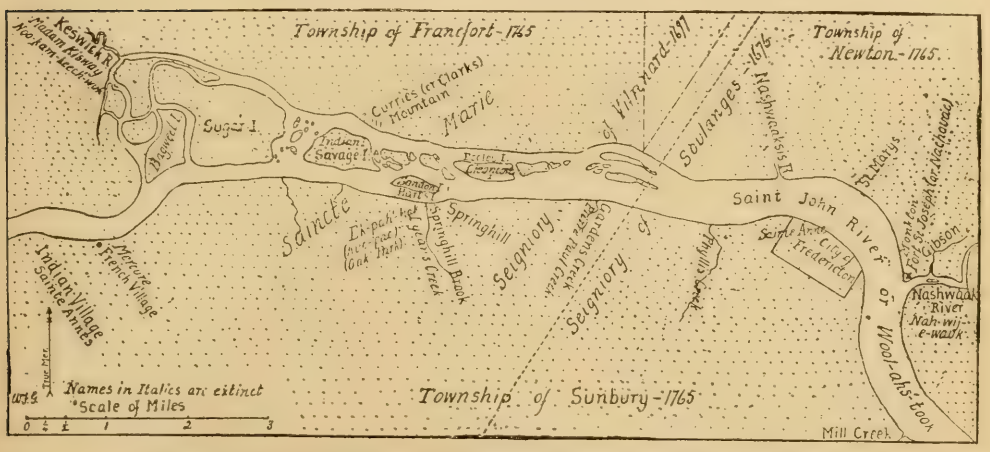
The expression "bounded in front by the sea" would locate it somewhat as on our map No 39.

1676—Nashwaak. *To Pierre de Joibert, Ecuyer, Sieur de Soulanges & de Marson.* (Oct. 12).

"Le lieu appellé Nachouac & que l'on appellera à l'avenir Soulanges, sur ladite rivière Saint Jean, à quinze lieües du Gemisik, contenant deux lieües de front de chaque côté sur ladite rivière, & deux lieües de profondeur dans les terres, aussi de chaque côté, ensemble les isles & islets qui sont dans ladite rivière au devant desdites lieües de front." (Mem. 744.)

The location is undoubtable ; it is shown on Map No. 39, also 38.

It is stated in the grant that it is made in consideration of services he



MAP NO. 38. HISTORICAL MAP OF THE VICINITY OF FREDERICTON.

had rendered, and with the wish to engage him to continue them, and that it is made so large because so little of it is cultivable.

1676—Fort Jemseg. *To Pierre de Joibert, Ecuyer, Sieur de Soulanges et de Marson.* (Oct. 16).

"Ledit fort de Gemisik, avec une lieüe de chaque côté dudit fort, faisant deux lieües de front, la devanture de la rivière, & les isles & islets qui y sont, & deux lieües de profondeur dans les terres, avec le droit de chasse & de pêche dans l'étendüe desdits lieux." (Mem. 746).

There can be no doubt as to the location of this Seigniory ; it is shown on Map No. 39.

About 1690 this Seigniory had passed to the Sieur de Chauffours. This is shown by two facts : first, the grant to the widow of the Sieur de Marson, given below, in 1691 mentions the "concession de Sieur de Chauffour, nommé Jemseg," and, second, John Gyles shows in his narrative that he was living here in 1696. Whether he obtained it by purchase or a re-grant, as the

term concession would imply, we do not know. Curiously enough, the Morris Map of 1758 marks *Chofour* as a village just below the present Gagetown. Le Sieur de Soulanges had for four years been commander of this fort and that "of the River St. John." In 1674 the fort, which he had repaired, had been destroyed by the Hollanders, and was repaired by him at his own expense. As a recompense, the proprietorship of the fort was given to him. See his grants of 1672.

He afterwards, in 1702, was granted the Seigniory of Soulanges in Quebec. (Archives, 1884, 26). In one document Soulanges is spoken of as "Lieutenant of the Company of Infantry of Grand Fontaine, in the regiment of *Poitou*, and Major of Acadia ; has rendered good and praiseworthy services in divers places both in Old and New France."

In 1682 the King granted to Sieurs Bergier, Gautier, Boucher, and De Mantes lands on the St. John for a fishery, but they appear not to have been taken up. It is, however, to be noted that on the Morris Map of 1758 the Belleisle is called *R. au Gautier.*

1684—The St. John, near Meductic. *René d'Amours, Ecuyer, Sieur de Clignancourt.* (Sept. 20, confirmed May 27, 1689).

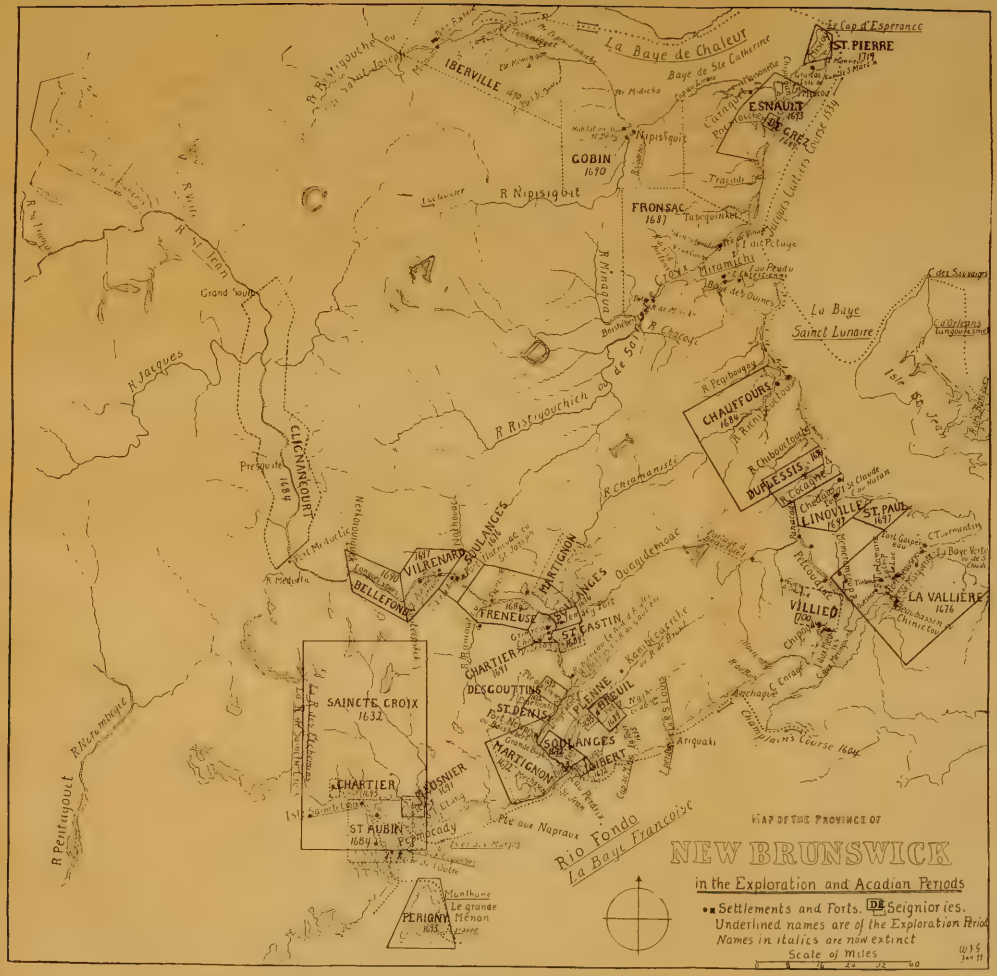
"Ce qui se rencontre de terre non concédée ni habituée le long de ladite rivière Saint Jean, depuis ledit lieu de Medoctet, icellui comprise, jusques au long sault qui se trouve en remontrant ladite rivière Saint Jean, icelle comprise, avec les isles & islets qui se rencontreront dans cet espace, & deux lieües de profondeur de chaque côté de ladite rivière Saint Jean. .....lequel fief & seigneurie portera le nom de Clignancourt." (Mem.)

The description does not make the location of the Seigniory plain, though it evidently extended from Fort Meductic either down the river to the Meductic Falls, or else upwards to Grand Falls. Several students have taken the former view, including Rev. W. O. Raymond, but I have inclined to the latter, chiefly because the description seems to imply that it ran up the river from Meductic, and also because the expression "long sault" seems to apply much better to Grand Falls than to the Meductic Falls, which are really but a rapid. Moreover, the stretch of river from Meductic Falls to Meductic contains much poor land, which Clignancourt, well acquainted with the river, would be unlikely to choose. Against my view is only the immense extent of the seigniory, which would thus be much the largest on the river, but not after all much larger than that granted his brother at Richibucto. The authorities may, however, well have been ignorant of its extent. Early maps place the Meductic River wrongly emptying into the Long Reach, and Perley has supposed this seigniory extended thence to the Falls at St. John, but this is impossible for many reasons.

Though his seigniory was near Meductic, and he occasionally visited Meductic as Gyles' narrative shows, his residence appears to have been on Eccles Island below Springhill (See Map No. 38), for the census of 1696 returns him as living at Aucpac, and this island on all early maps is called *Cleoncore*, which seems plainly enough a corruption of his name.

1684. Nashwaak to Jemseg. *To Mathieu d'Amours, Ecuyer, Sieur de Freneuse.* (Sept. 20, confirmed March 1, 1693).

"Des terres non concédées ni habituées le long de la rivière de Saint-Jean, entre les lieux de Gemisik & de Nachouac, sur deux lieües de profondeur de chaque côté de la rivière Saint-Jean, icelle comprise, avec les isles & islets qui se rencontrent dans cet espace, ensemble la rivière du Kamouc-



Map No. 39.—Map of New Brunswick in the Exploration and Acadian Periods.

tou [Ramouctou] autant que ladite profondeur de deux lieües s'étendra." (Mem.)

The location of this seigniory is beyond doubt, and is given on Map No. 39. The probable site of the residence of Sieur de Freneuse has already been discussed.

There is a very confusing error in reference to this grant in the "Memorials" where it is called the confirmation of the preceding (that to Réné d'Amours) whereas it has nothing to do with the latter.

In 1696 the Sieur de Freneuse, as the original document now in my possession shows, leased his Seigniory for five years to Michel Chartier. It is described in part as follows: "Le Manoir Seigneurial de la dite Seigneurie de Freneuse consistant en trente arpents ou environ de terre labourable à la charrue, près, bois en haut futoye et taillie avec les maisons granges et estables qui sont dessus, etc." Freneuse was killed the same year at Fort Nashwaak. Michel Chartier was perhaps the same who the previous year received the Seigniory of Scoodic.

1689—Kennebecasis. *To Pierre Chesnet, Ecuyer, Sieur de Breuil* (*or Dubreuil.*) (Jan. 7.)

"Deux lieües de front le long de la rivière Saint-Jean, dans le lieu appellé par les Sauvages Kanibecachiche & petit Nakchouac, sçavoir, une lieüe d'un côte & une lieüe de l'autre, ledit petit Nakchouac faisant le milieu de ladite concession, avec les isles & islets qui se trouveront au devant, & trois lieües de profondeur." (Mem. 769; Leg. 102.)

The location is plain; it is shown on map No. 39. Petit Nakchouac is known to have been Hammond River. On Morris' map of 1758, the Kennebecasis is called "La Riviere de Bruhl," seeming to show he had made some attempt to settle his seigniory. Probably, however, the later occurrence of a "French Village" on his land is but a coincidence, as already shown.

1689—Below Jemseg. *To Sieur Vincent de St. Castin.* (Oct. 14.)

"Lesdits 2 lieües de front à prendre en terres non concédées le long de la rivière St. Jean, joignant les terres de Jemesec . . . sur pareille profondeur de 2 lieües." (Leg. 115.)

Since all of the lands above Jemseg had been granted, this must have been just below the Jemseg Seigniory, as shown on map No. 39.

1690—On River St. John. *To Sieur Jean de Valence.* (Confirmed Mar. 16, 1691).

"D'une estendue de terre à la rivière St. Jean." (Docs. II., p. 40.)

We have no hint as to the location of this Seigniory. It is the only one not on map No. 39.

1690—Nacawicac to Long's Creek. *To Sieur François Genaple de Bellefond.* (Feb. 25; confirmed Mar. 16, 1691.)

"Une espace de terres scituée à la rivière St. Jean, païs de l'Acadie, entre Madoktek et Nacchouak, qui joint à la terre de Gemezek, contenant l'espace de terre sur le lieu appellé les longues veues commençant a la rivière appellée Skooleopskek jusques au lieu et rivière appellée Nerkoiooiquek, sur deux lieues de profondeur dans lesdits terres, d'un costé et d'aultre ladite rivière St. Jean; ensemble les isles et islets qui sont dans ledit espace."[1] (Doc. II., 39; Leg. 116; Murdoch I., 198.)

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[1] Spelling of proper names is taken from the copy in the Ben. Perley Poore Documents in the Massachusetts State House. Many of the Quebec Documents are copied from this collection, but it has been badly done and many errors have been introduced.

Though the different copies of this grant differ considerably in the spelling of the place names, there can be no doubt as to the location of the Seigniory, which is shown on map No. 39.

The *longues veues* is still called the "Upper Reach," i. e., Upper Long Reach; Nerkoiooiquek is Nacawicac, and Skooleopskek (i. e., Skooteopskek) is known to be Long's Creek. De Bellefond was Notary Royal at Quebec, and probably did not attempt to settle his grant.

1691—At Gagetown. *To Dame Marie François Chartier, veuve du Sieur de Marson.* (Mar. 23; confirmed Mar. 1, 1693.)

"Une terre à la rivière St. Jean, a l'Acadie, de quatre lieues de front sur ladite rivière, de deux lieues de profondeur de l'autre costé, et vis-a-vis la concession du Sieur de Chauffour, nommée Jemsec, le milieu desquelles quatre lieus sera vis-a-vis la maison de Jemsec." (Doc. II., 113; Leg. 120; Murdoch, I., 199.)

There can be no doubt as to its location; it is given on map No. 39. It included the present site of Gagetown.

1695—Kennebecasis. *To Sieur Bernard D'Amours, Ecyr.* [*Sieur de Plenne*]. (June 20, confirmed 1696).

"La rivière Canibecachice affluent dans la rivière St. Jean à l'Acadie et d'une lieue et demye de chaque costé sur deux de profondeur. (Doc. II., 224; Leg. 151.)

Only an approximate location can be given for this Seigniory, since we do not know how far up the river the grant was taken.

1695—Oak Point. *To Sieur des Gouttins* (*or De Goutin*). (June 20, confirmed 1696).

"Lieu nommé la Pointe aux Chenes scituée à la rivière St. Jean de l'Acadie et d'une lieue de chaque costé de la dite pointe sur deux de profondeur." (Doc. II. 224: Leg. 152).

There can be little doubt as to the location of this Seigniory, as shown on Map No. 39. Some versions give *Pointe aux Chenilles*, but others *Pointe aux Chenes*, and the Morris Map of 1758 shows that the present Oak Point was so called by the Acadians.

1697—Nashwaak to Long's Creek. *To Charles Genaples, Sieur de Vilrenard.* (April 23).

"Of the space of land containing a league and a half front by two in depth, to bound from the seigneurie of Naxcouak, to the river of Skouteepkek, with the islands, islets and flats within that extent." (Murdoch I., 238; also Leg. 173.)

The boundaries given locate this Seigniory as on Map No. 38 and 39, even though its length is far underestimated. Murdoch gives the name of the Seignior as Villeneuve, but the French Documents have Vilrenard.

It is stated by Rameau (II. 188) that in 1750 M. de Vaudreuil possessed the great fief of Ekoupag, i. e., Ekpahak or Aucpac, but I know of no ground for this statement.

3. The Petitcodiac-Misseguash District.

The fullest account we have of the seigniories and settlers in this district is given by Rameau de Saint-Père in his "Colonie Féodale." That of La Vallière was the most important of all seigniories in the present New Brunswick.

1676—Chignitou, or Beaubassin. *To Michel le Neuf, Ecuyer, Sieur de la Vallière.* (Oct. 24.)

"L'étendue de dix lieües de terre de front, qui sont du côté du sud, entre le Cap-Breton & l'isle Percée, à commencer depuis la rivière Kigiskouabouguet, icelle comprise jusqu' à une autre rivière appellée Kimoutgouitche, aussi y comprise avec dix lieües de profondeur dans lesdits terres, dont la baie de Chinigtou & le cap Tourmentin font partie." (Mem. 753.)

The general location of this Seigniory is plain enough, and as shown on map 39, though there is some doubt about its exact boundaries. The *Kigiskouabouguet* is probably River Philip, which the Micmacs now call *Koos-oos-ti-boo-guac*, but I cannot locate *Kimoutgouitche*, but it may be at or near Shemogue. *La baie de Chinigtou* is, of course, the present Cumberland Basin.

LaVallière, who was an important man in Acadia, made a successful attempt to introduce settlers and cultivate lands, and thus became the only seignior in what is now New Brunswick who to any degree fulfilled the conditions of his grant, and the only one who can thus be reckoned along with the seigniors of Quebec. He had a seigniorial manor, mentioned in a document of 1705, whose site is unknown, though in all probability it was on the island called always in French maps and documents *Isle La Vallière*, now Tonges Island, (Map No. 24.) About 1702 he became involved in disputes about boundaries with the settlers of Shepody and Petitcodiac, and this was settled by a special act of the Conseil d'État, in 1703 (Rameau, II., 337), which extended his seigniory to include Shepody and Petitcodiac, but forbade his disturbing the settlers there.

In 1678 la Vallière gave a tract of land at Beaubassin for a mission, and it was thus described in a document of that year: (Le Tac, 191.)

"La donation faite par le Sr de la Vallière, seigneur de Beaubassin dans l'Acadie et Dam^lle Denis, sa femme aux RR.PP. Recollets . . . de six arpens de front qui sont en prairies dans lad. seigneurie de Beaubassin sur la rivière appellée la Rivière Brouillée vis-à-vis la pointe de Beauséjour en montant au Nord-est & des terres qui se trouveront dans la profondeur depuis lad^te pointe juisques à moitié chemin des habitations des nommez Martin & LaVallée anisi qu'il est porté plus au long dans le contract de lad^te donation passé aux Trois Rivières le 2e septembre 1678 pardevant Ameau, Notaire roïal."

Since the identity of the Rivière Brouillée is unknown, it is impossible to locate this grant with certainty. Of course, the church would have been built upon it, and but two early churches are known in this vicinity, one at Beaubassin, near Fort Lawrence, and the other near Fort Beauséjour, though the earlier one burnt by Col. Church in 1696 perhaps stood on a different site. The latter stood on the western slope of the Fort Cumberland Ridge, not far from the fort (explained earlier), and from the mention of the grant as "opposite the point of Beauséjour going towards the northeast," we

may infer that the grant was there. In this case, the Rivière Brouillée would be either an earlier name for the Aulac, or for one of the two or three aboideaued smaller streams in that vicinity. This Mission is marked on the "Carte généralle de la Nouvelle France" of 1692, but not accurately enough to determine its precise position.

The settlements of Shepody and Petitcodiac were founded, as fully described by Rameau, in 1698, the former by Thibaudeau and the latter by Blanchard. In 1702 it was recommended by DesGouttins that they be given grants of these places, of course in seigniory, but decisions of the Council of State of 1703 and 1705 show that while they were allowed to continue to occupy their lands they were within the limits of the Seigniory of LaVallière. (Rameau, II., 336, 337.)

1700—Cape Near Shepody. *To Sieur de Villieu.* (Aug. 21.)

"Two leagues of land in front [and two in depth], to be taken from the Cape nearest to the Bay of Chiepoudy, on the north-east side thereof, descending to the south-west, together with the island called *aux Meules.*" (Leg. 189.)

It is possible to locate this Seigniory only approximately, and its probable situation is shown on map No. 39. There is no doubt about *I. aux Meules*—it is the name on all the old maps for the present Grindstone Island.

4. The Richibucto District.

No account whatever of the seigniories in this district has yet been published.

The first great grant in this region was that of 1636, confirmed in 1653 and 1667, to Nicolas Denys, which included all the coast from Cape Breton to Gaspé. It was not revoked until after 1685, for in that year Richard Denys, as representative of his father, made grants to Recollet Missionaries at Miramichi and Restigouche. Yet in 1684 a portion was regranted at Richibucto and other places.

1684—Richibucto. *To Louis d'Amours, Ecuyer, Sieur de Chauffours.* (Sept. 20, confirmed May 24, 1689).

"Ladite rivière Richibouctou, avec une lieüe de terre de front du côté du sud-ouest, & de l'autre côté jusques à trois lieües au delà de ladite rivière Chibouctouche, icelle comprise & les isles, islets adjacentes, & de profondeur jusq'au portage qui se trouve dans ladite rivière Richibouctou, duquel portage sera tiré une ligne paralélle au front & bord de la mer, pour terminer ladite profondeur. . . . lequel fief & seigneurie portera le nom de Chauffours." (Mem. 748).

This Seigniory can be located perfectly, as shown on the map No. 39.

It is stated in the grant that the new Seignior had for two years been cultivating a piece of land on the southwest side of the Richibucto, where he had built a fort and two small houses, and was intending to bring settlers there—to encourage all which, this grant was made. But about 1690 he had removed to Jemseg, as already shown, perhaps in order to be near his two brothers on the St. John.

It appears that land in this region had been granted previous to 1665, but not having been occupied, had reverted to the Crown. The grant is printed in full in Mem., p. 761.

1696—At Cocagne. *To George Renard, Sieur Duplessis.* (Oct. 15).

"The bay and river of Cocagne, situate in Acadia, together with two leagues of land in front on each side of the said bay by six leagues in depth, the said front to commence on the sea shore, and thus continue the whole depth, also the adjacent islands, islets and meadows, to which grant we give the name of Duplessis." (Leg. 158).

The location of this seigniory is plain, and is as shown on the map No. 39. It overlaps the seigniory of De Chauffours, a fact of course not known at that time. In the grant Sieur Duplessis is described as "Clerk in the country for M. De Lubert, treasurer general of the Navy."

1697—Linoville, at Shediac. *To Sieur Mathieu de Lino, Marchand à Quebec.* (Mar. 29).

"A certain tract of land containing five leagues or thereabouts by a similar depth, situate on the coast of Acadia, opposite the island of St. John, to be taken from the concession of the Sieur Duplessis, treasurer of the navy, of the Bay and River of Cocagne, going towards the south-east in the direction of that of the Sieur de la Vallière, together with the islands, islets, beaches and capes, situate opposite the same, and give to the said concession the name of Linoville." (Leg. 167.)

The location of this Seigniory is plain and shown on map 39.

The grant states it is in return for his service as interpreter in the English language, which he has always done gratis.

1697—St. Paul at Cape Bald. *To Sieur Paul Dupuy.* (Apr. 4).

"Three leagues of land in front or thereabouts by a similar depth, situate on the coast of Acadia on the great bay of St. Lawrence, joining on one side the concession of the Sieur de Lino, and on the other side that of the Sieur de la Vallière, together with the islands, islets and beaches which may be found within the said extent, and give the said land the name of St. Paul." (Leg. 168).

The location is unmistakable, and is shown on map No. 39. The grant states that it is "in consideration of the good services which the said Sieur Dupuy has rendered in this country, as well in war as in the discharge of the situations which he has held."

5. *The Miramichi District.*

The history of the single Seigniory of this district has not yet been written, except briefly in Mr. Raymond's recent paper on the North Shore. It was entirely unknown to Cooney, the only historian of the Miramichi valley.

1687—Miramichi. *To Sieur Richard Denys de Fronsac.* (Apr. 18, confirmed Mar. 16, 1691).

"A quinze lieues de devanture sur quinz lieues de profondeur, à prendre depuys la rivière *Des truites*, ycelle comprise une lieue tirant au sud-est, et les aultres quatorze lieues tirant au nord ouest." (Docs II., 40, Murdoch I., 198).

There is much confusion in the different versions of this grant, and the confirmations usually attribute it to Nicolas Denys de Fronsac or Frontenac. Murdoch (I., 198) with others has this error. Yet several facts put it beyond doubt that the grant was to the son Richard, not to the father Nicolas.

Thus the only version I have seen of the original grant has Richard Denys; both St. Valier and Le Clercq tell us that Richard Denys lived at Miramichi, and they speak of him as proprietor; an early document (Archives, 1884, 18) on Seigniories speaks of Richard Denys de Fronsac as first grantee of Miramichi.

I have not been able to locate this Seigniory. The identity of the Riviere des Truites (Trout River) is unknown; there must be some error about the directions, for a line running first southeast, and then northwest would run back upon itself. It must have been on the north side of Miramichi, partly because Denys residence (discussed earlier) was almost certainly there, and partly because grants at Nepisiguit later to be mentioned, bordered upon it.

Richard Denys afterwards acquired the extensive Seigniories of Nepisiguit and Restigouche.[1]

In 1685, (Aug. 13), Richard Denys, as lieutenant for his father, granted three leagues of land to the Recollets for a mission on the river St. Croix (Miramichi) (Murdoch, I., 168). St. Valier says the missionaries chose the land at Skinoubondiche, which it can scarcely be questioned was the modern Burnt Church Point (see earlier); and thus originated the present Burnt Church Indian Mission, which is thus by far the oldest now in existence in New Brunswick. This Mission is marked on the "Carte généralle de la Nouvelle France" of 1692, on the north side of the Miramichi, near its mouth, but not accurately enough to determine its exact site.

6. *The Nepisiguit District.*

No account of the Seigniories of this district has yet been published, excepting only the scanty and erroneous references in Cooney.

The original grant to Denys included all this district, and he had establishments, as he tells us in his book, at Miscou and Nepisiguit. His rights must have lapsed after 1685, for after that date large portions of that district were regranted.

It is possible there was a grant of Miscou to a Company in 1668, but evidently it was of little or no effect. (Archives, 1885, 33).

1689.—Pocmouche. *To Michel De Grez, habitant de Pocmouche.* (Aug. 3).

"1 lieue de front sur 1 lieue profondeur dans la Rivière de Pomouche." (Leg. 112.)

The site of this grant (not a Seigniory) may be fixed approximately, as on Map 39. This was afterwards included in a Seigniory of Esnault (see later), and it is said of DeGrez (or Delgrais) that he has "retired with the English of Boston, and married an English woman, although he was married to an Indian woman, and his marriage had been solemnized in presence of the church."

1690—Nepisiguit. *To Sieur Jean Gobin, Marchand à Quebec.* (May 26, confirmed March 16, 1691).

"Extent of twelve leagues in front by ten leagues in depth on the *Baie des Chaleurs* in Acadia, together with the rivers which may be found within the limits of the said tract of land, the said twelve leagues of land to com-

[1] On their later history see Murdoch, II., 441 and Archives, 1884, 10, 18.

mence running from the boundary of the concession made to the Sieur de Fronsac, settled by the Intendants' Ordinance bearing date the eighteenth day of April last, going towards the northeast, together with the points of land, islands, islets and shoals which may be found situate opposite the said tract of land."

In the preamble "including the River Nepisiguit" is given. (Murdoch, I., 198, Leg. 117).

It is not possible to locate this Seigniory very exactly unless it be assumed that the Nepisiguit formed its central part, as was usual in such grants.

This grant (Archives, 1884, 9) was ceded by Gobin, "the first grantee," to Richard Denys de Fronsac, and through his wife descended to Rey-Gaillard, who held it in 1753.

This appears to be the grant that Cooney assigns to Jean Jacques Enaud, as including all land between Grand Ance and Jacquet River, which is certainly an error, as Gobin was the first grantee. Esnault (or Enaud) is spoken of in the Census of 1686 as a resident of Nepisiguit, as he is in his grant of Pocmouche of 1693. He may have been agent for Gobin.

1693—Pokemouche. *To Philipes Esnault, habitant de Nepisiguit.* (Aug. 17; confirmed Apr. 15, 1694.)

"The said river Pocmouche, and four leagues of land in front on each side of the same, by a similar depth, the present grant including the said one league of land heretofore conceded to the said Degrais." (Leg. 136).

The location is fairly plain, and as shown on Map No. 39. Degrais (DeGrez) had abandoned his land, owing Esnault 200 livres, as the grant relates.

Esnault is mentioned in documents of the time—in the Census and in Leclercq, who calls him Henaut, Sieur de Barbaucannes. Cooney gives traditions of him and calls him Jean Jacques Enaud, and puts his coming to Nepisiguit much too early. Dionne (Miscou) says he was granted the fief of Nepisguit, two square leagues, but I find no authority for this, and it must be an error, since Nepisiguit was granted to Gobin. A Réné d'Eneau received a grant at Port Daniel in 1696.

1719—Miscou. *To Count St. Pierre, premier ecuyer de Madame la duchesse d' Orleans.*

The islands of St. John and Miscou. (Murdoch, I., 382). In 1730 this grant was revoked. An interesting account of it is given by Murdoch.

7. *Restigouche District.*

No account of the single Seigniory on this river on the New Brunswick side has yet been published.

In 1685 (Aug. 3) Richard Denys de Fronsac, acting as lieutenant for his father, granted three leagues of land at Restigouche to the Recollets for a mission. There is no special evidence to locate this grant, but it is altogether probable it included old Mission Point above Campbellton, as already discussed.

1690—Restigouche. (May 26, confirmed March 16, 1691). *To Sieur [Pierre] Le Moyne d'Iberville.*

"A space of land of 12 leagues front by 10 leagues in depth, in the Bay of Chaleurs, in Acadie, comprising the rivers to be found within that

extent, measuring said 12 leagues from the boundary of Sr. Gobin's grant on the north west course in part, and the other part on the east south east, the river of Restigouche included, with the points, islands, islets and flats in the front." (Murdoch, I., 198. Doc. II., 40; Leg. 118.)

The location of this Seigniory is in the main clear, and as shown in Map No. 39. It could hardly, however, have bordered upon the lands of Gobin, as the distance from Nepisiguit to Restigouche is too great.

This Seigniory was ceded by d'Iberville to Richard Denys de Fronsac (Archives, 1884,10) and descended through his wife to Rey-Gaillard, who held it in 1753.

The grant of 1707 to Charles Morin on the River Listigouche was in Cloridon and therefore in Quebec, outside of our present limits.

IV. THE ENGLISH PERIOD.

This clearly marked and most interesting period of our history, second in importance only to the Loyalist period, has not yet been treated as a whole by any of our historians. Its beginning was really marked by the Treaty of Utrecht in 1713, which transferred Acadia to England, though it was always denied by the French that the Acadia thus ceded included the mainland, or what is now New Brunswick. No attempt was made by the English to settle any part of this Province until after the capture of Fort Beauséjour (Fort Cumberland) and the expulsion of the Acádians. The first actual English settlement in any part of the present New Brunswick, excepting a few settlers about Fort Cumberland, was made by a party of New Englanders from Rhode Island at Sackville in 1761. The next year James Simonds established himself at the mouth of the St. John, and in 1763 a large colony from New England settled at Maugerville, on the St. John, constituting the largest and most important immigration to this part of the Province that occurred in this period. About the same time the traders and fishermen from New England, previously migratory, began to settle at Passamaquoddy, and slowly increased in numbers until 1770, when Lieutenant William Owen settled at Campobello with his colony of thirty settlers from England, the most important accession to this region in this period. New settlers from New England continued to arrive at the head of the Bay of Fundy, and in 1763 a few families of German descent from Pennsylvania settled on the west side of the Petitcodiac, while in 1772 the settlements about the Misseguash district received a most important accession in a number of families from Yorkshire, England. In 1764 Davidson and Cort, from Scotland, settled on the Miramichi, and from time to time other settlers joined them. At Nepisiguit, about 1766, Commodore Walker established an important trading post, with a branch at Restigouche, where also one Shoolbred was established. On the St. John, settlers continued to arrive from different places, though in no great numbers, and a few came as ten-

ants upon the great grants which were made in this period. During the early part of the revolution all of the New Brunswick settlements suffered greatly from the attacks of privateers, which is a polite name for those vultures who use great causes as a cloak for the most dastardly and cowardly of outrages. After Fort Howe was built in 1778, the settlements on the St. John were safe, and many settlers from more exposed places went there, while war vessels in the Bay of Fundy partially protected the others ; but the traders on the Miramichi, Nepisiguit and Restigouche were well nigh or quite ruined by them. Finally, after the peace of 1783, this period at Passamaquoddy and on the St. John was brought to an abrupt end by the arrival of the Loyalists. They produced, however, comparatively little effect in Sackville and Cumberland, at the head of the Bay of Fundy, and practically none at all anywhere on the North Shore, in which the English period may be considered to have merged gradually into the Post-Loyalist period.

Of the greatest importance in the history of this period is the attempt to settle the Province by the introduction of tenants through immense grants made to officers and others. It is not within the function of this paper to trace the history of this most important and interesting subject, and I can but indicate here a few of its leading points. Shortly after 1760 it was decided to reserve most of the rich lands of the St. John for officers of the Royal service. So markedly was this the policy of Government that it was only through an exception made in their favour that the Maugerville settlers were able to hold the lands they had taken possession of in 1763. In 1765 the St. John and Passamaquoddy were surveyed by Morris, and there began a series of immense land grants to individual officers and to associations of disbanded officers and others. The larger of these grants were established as townships of some 100,000 or more acres, and during 1765 no less than eleven of these townships, those of Francfort, Amesbury, Burton, Sunbury, Newtown, Conway, Gagetown, and one other on the St. John, and Monckton, Hopewell and Hillsborough on the Petitcodiac were granted, with numerous smaller grants in their vicinity. Maugerville and Cumberland had already been granted to genuine settlers, and Sackville was later similarly granted. The history of these three townships differs from all the others in that they were settled before they were granted. In later years other large grants were made, but not again in such abundance and size as in 1765. A condition of all these grants was the settlement upon them of a given, and considerable, number of settlers within a certain time, and there is abundant evidence in old records, such as newspaper advertisements, colonization broadsides, etc., that many of the grantees made vigorous efforts to obtain settlers, offering them most liberal inducements. But settlers were very hard to obtain, and in many of these townships few or none were settled, and in none of them whatever were the conditions complied with sufficiently to hold the land. In some

of the other large grants to smaller associations and to individuals, however, settlers were brought and conditions fulfilled, so that the land is held under those titles to this day. The best examples of this are Campobello at Passamaquoddy, and Kemble Manor and a part of Spryhampton, on the St. John, but there were several others of lesser note as well. It was, of course, expected that many of these grants would be settled like the great estates in England, with tenants paying rent to the proprietors; and some of them were, of which Campobello is the best example, in which, indeed, the tenant system persists to this day. In the case of the great townships, however, where the proprietors were numerous, they were probably actuated rather by a spirit of speculation, based on the belief that these lands would advance immensely in value, and could then be sold out at a large profit. But this expectation was never realized, and when in 1783 the lands were needed for the Loyalists, there was no difficulty in securing the escheat of all the townships for non-fulfilment of conditions, and they were regranted to actual Loyalist settlers, as will presently be described. It is rather a striking coincidence that these same lands which the French Government attempted to settle upon the seigniorial system, the British Government attempted nearly a century later to settle upon the tenant system, and that the attempt failed in both cases, though the lands themselves are among the richest in America. Thus the great townships on the St. John all became extinct, and even their names are mostly forgotten, though some of them, Burton, Sunbury, Gagetown persist as parishes or county. But would it not be well, as new names are needed in those places, to revive again *Francfort*, *Amesbury* or *Almeston*, *Conway*, and even the names of smaller grants, such as *Spryhampton*, *Mount Pawlett*, *Heatonville*, *Morrisania?* In Westmorland, though *Monckton*, *Hillsborough* and *Hopewell* were escheated, the names persist; in this county the old townships of Nova Scotia all became parishes in New Brunswick. The old townships produced, however, one effect which still lasts; their boundaries in many cases became parish, and even county lines, particularly in Westmorland, and in many cases these boundaries have persisted through all subsequent changes.

The settlements and land grants of this period are shown on the accompanying map No. 45, on which those whose locations are not certainly known to me are in dotted lines. One will be struck at once with the fact that both settlements and grants of this period coincide remarkably with those of the preceding Acadian period. There is, of course, no genetic connection between the two, but the coincidence is due to independent adaptation to a similar enviroment,—it is the nature of the country that determines where the settlements were in the two cases. A second feature is the much larger settlement of the Passamaquoddy and St. John and Cumberland region in comparison with the North Shore, which in this period received hardly any settlers at all, and those mostly from

England. This fact is partly explained by the superior quality of the land on the St. John and at Cumberland, and of the fishery at Passamaquoddy, but a far more important cause is found in geographical conditions. Since all travel was by water, and most of the settlers were from New England, the far distant North Shore naturally received but few of them. A third striking fact is the importance of the rivers and harbours in influencing settlement; none of those in this period were away from the margin of waters navigable by small vessels.

A. Settlements and Forts.

1. The Passamaquoddy District.

The history of the settlements of this period in this district has been so fully written in the "Courier Series," and in the two papers on Campobello in the Collections of the New Brunswick Historical Society that the very briefest reference is all that is necessary here, and the facts given below are to be understood as derived from these two sources. The period began with the visits of New England fishermen and traders soon after 1760, and except for the Owen colony, all were from New England. The first permanent settler was Alexander Hodges at Pleasant Point in 1763; others came from time to time to different points, and a great accession was made in the Owen colony on Campobello in 1770. The settlers gradually, but very slowly, increased in numbers until the coming of the Loyalists in 1783. With the exception of the Campobello colony and one or two others, however, the settlers were all squatters to whose fancied rights the Loyalists paid scant regard.

A.—At St. Stephen, Fishermen had a camp here as early as 1760, and when the Loyalists came in 1784 they found nine families on the site of St. Stephen scattered along the river front. A full account of them and their exact locations is in the Courier Series.

B.—At St. Andrews. In 1770 two settlers established themselves near the public landing at St. Andrews, and others came later. The name St. Andrews was used at least as early as 1765, and belongs perhaps to the Acadian period.

C.—Digdeguash. Joseph Curry settled at the mouth of this river soon after 1770.

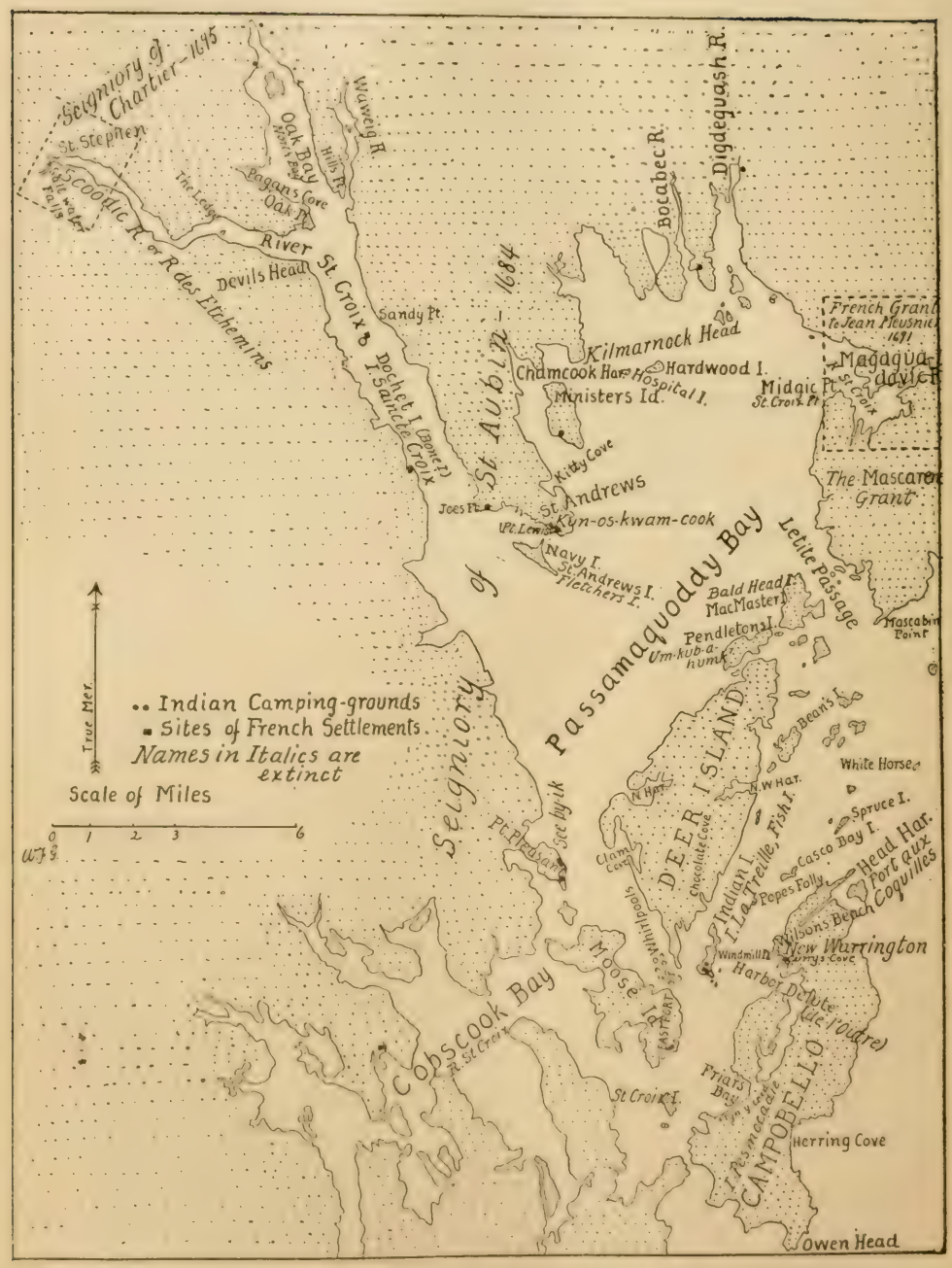
D.—Deer Island. In 1770 Captain Ferrel established himself at Chocolate Cove, after buying the Island from its original grantee; other settlers came later.

E.—Pleasant Point. The first settler came in 1763, and others later. This was probably the earliest permanent English settlement in this district.

F.—Indian Island. James Boyd settled here in 1763, and others later. This island became an important trading post, and was known also as Fish Island or Perkins Island. All the early settlers appear to have occupied the southern end of the island. Marvel Island, connected with it on the south, was probably the site of Simonds' and White's trading post of 1763-1770.

G.—Moose Island. Settlement was begun here about 1772.

H.—Campobello. On this island were two important settlements. Robert Wilson with others settled at Wilson's Beach in 1766, buying out one predecessor.



Map No. 40. Historical Map of Passamaquoddy.

Wilson was a squatter, but acquired his lands by possession, later confirmed by a grant. In 1770 Lieutenant Owen arrived from England with some 30 settlers and established the settlement of New Warrington on Campobello, the most important of the pre-Loyalist settlements in this district. The site of this settlement is perfectly well known and shown on a cut on p. 11 of the second Campobello paper. It was on Harbour Delute between Curry's cove and Wilson's Beach.

There were temporary settlers on Grand Manan at Bonny's Brook, but for a short time only, as related by Mr. Howe. (Coll. N. B. Hist. Soc., I. 346.)

There were possibly a few scattered single settlers at other points in this district, and there were others on Cobscook bay, not within our present limits, but these are all that are positively known in the region within the limits of this paper. The sites of these settlements are shown on the accompanying map No. 40. It is noteworthy with what regularity the settlements of this period occupied the same sites as those of the Acadian period, which in their turn had so frequently occupied the sites of earlier Indian camping-grounds.

During this period there were no forts in this district.

2. The St. John District.

Though no complete history of the settlements of this period on the St. John has yet been attempted, there are very satisfactory histories of at least three of the particular settlements by New Brunswick historians, i.e. of the Maugerville Settlement by Hannay, of Kemble Manor by Howe, and of the settlements at the mouth of the river by Raymond; and there are many references to other settlements of the period in the writings of these and other local historians. A most valuable document giving a full return of all the settlers in this district before the coming of the Loyalists has been printed in the collections of the New Brunswick Historical Society; and in the Crown Land office at Fredericton are many maps, grants, etc., relating to the period. The materials, therefore, are fairly ample for recovering the locations of the settlements of this period in this district, and a brief account will here suffice.

The permanent settlement of the district began with the arrival of James Simonds at the mouth of the river in 1762. In the next year the Maugerville colony brought a large number of settlers from New England, and formed the only important single accession received during the period; for, after that, the settlers, coming from the most diverse sources, arrived singly or in small numbers, so that they increased but slowly, though steadily, until the coming of the Loyalists in 1783. The attempt to settle the best lands of the river by large grants on the tenant system, presently to be considered, was almost a complete failure. The settlements of this period extended up from the mouth of the river to St. Anne's Point, at which and just above until the end of the period, were some sixty families of Acadian French. The positions of the townships will be described in the next section.

A. Settlements.

A.—St. Annes Point. The return of 1783 shows three families here. The exact sites of their settlement and of those of the French Acadians are not known to me, though possibly some of the early plans in the York deeds would throw light upon the subject.

B.—Nashwaak. In 1783 there were eight families here in the township of Newtown. Here near the old French fort, John Anderson had a grant and established a trading post in 1764. (See map No. 17).

A sawmill, on the site of the present mills at Marysville, was commenced by the Canada Company in 1766.

C.—Burton. (then including the present Lincoln). In 1783 some forty-two families were scattered along the river, of whom several were at the mouth of the Oromocto.

D.—Maugerville. The history of this settlement by Mr. Hannay, in the collections of the New Brunswick Historical Society, I., 63, gives full information upon it. It was composed of New Englanders and was by far the largest and most important settlement of the period in New Brunswick.

E.—Spryhampton, Heatonville, etc. (for location see map No. 45). These were not included in the return of 1783, and hence we know less about the settlements here than elsewhere. The map by Morris of 1774, shows several houses along the west bank of the river between Swan Creek and Harts Lake, but none on the opposite side except two at Jemseg. There were several later settlers about Jemseg, however, on leases from William Spry.

F.—Gagetown. The return of 1783 shows some thirty-seven families settled here, some of them on Musquash Island, of whom several, no doubt, lived on the site of the modern village of Gagetown. In 1771 C. N. G. Jadis had a store on the site of Gagetown, burnt that year by the Indians.

G.—Kemble Manor. The history of this grant and its settlers is fully given by Mr. Howe in the New Brunswick Magazine, I., 146. Several settlers upon it were scattered along the river.

H.—Amesbury, now Kingston. In 1783 there were but four families upon this tract.

I.—Indiantown. The Indian house for trading with the Indians was built here in 1779, and there was another settler on the opposite side of the river, of which full accounts are given by Mr. Raymond.

J.—Conway. (Carleton) See the following:

K.—Portland. The history of the settlements at the mouth of the St. John has been so exhaustively and authoritatively treated by Mr. Raymond (in the New Brunswick Magazine, vols. I., II. and III.) that no further reference to the subject is necessary here.

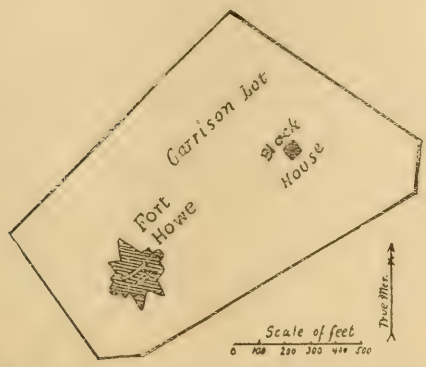
B. Forts.

In this period there were but three occupied forts on the St John.

A.—Fort Frederick. This stood at Carleton on the "Old Fort" site, whose earlier history has already been considered. It was at times in this period occupied by a small garrison, but being found insufficient for the defence of the river and harbour against the New England privateers, was abandoned

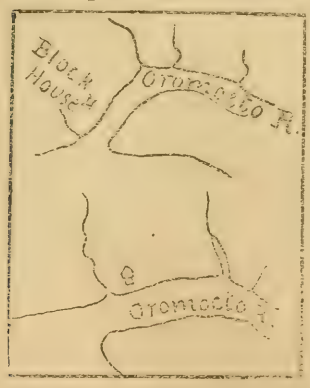
when Fort Howe was built. Its ground plan is shown on the accompanying map No. 41.

B.—Fort Howe. This fort was built in 1778 for the protection of the harbour and river against the New England privateers, which were particularly destructive to the settlers here in the early part of the Revolution. Its site is perfectly well known. It stood on the ridge back of Portland, and its name is still applied to the place. A picture of it made in 1781, is extant and has been published (in Coll. N. B. Hist. Soc., I, 312, and N. B. Mag. II, 81). Ground plans of it are shown on the accompanying maps Nos. 41 and 42, the first made probably by Robert Morse in 1784 to accompany his well-known Report, and the second from the Cunningham map of the harbour of 1835. Its position in relation to the other forts is shown on map No. 37.



MAP NO. 42. FROM CUNNINGHAM'S "PLAN OF THE CITY AND HARBOUR OF ST. JOHN," 1835; × $\frac{3}{8}$.

MAP NO. 41. FROM A "PLAN OF THE CITY AND HARBOUR OF SAINT JOHN," 1784. BY ROBT. MORSE (?); × $\frac{1}{2}$.
A. Fort Howe.
B. Block House.
F. Navy Island.
G. Fort Frederick.



MAP NO. 43. SITE OF FORT HUGHES. FROM OLD PLANS; × $\frac{1}{1}$.

C.—Fort Hughes. This was but a block-house, built in 1780. Its site is well known locally, and is shown on the accompanying map No. 43, copied from old plans in the Crown Land office.

3. The Petitcodiac-Misseguash District.

The history of the settlements of this period in this district, though of the very greatest interest and importance, has not yet been sufficiently treated. Mr. W. C. Milner has published newspaper articles upon the subject, and there is a small pamphlet by Charles Dixon treating of the Yorkshire settlers, with other fugitive newspaper articles, of which indeed a great number have appeared in the columns of the "Chignecto Post." On the settlement of the Petitcodiac I know of nothing published, aside

from a single article in the St. John Sun, referred to below. It is astonishing that so important and interesting a field has remained so long nearly unworked.

The period really begins for this district with the capture of Fort Beauséjour from the French in 1755, but actual settlement did not begin until the Rhode Islanders settled on the Tantramar in 1761. In 1763 some families of Pennsylvania Germans settled on the Shepody and Petitcodiac. Especially important was the arrival, in 1772, of several families from Yorkshire, England, who settled the rich lands about Amherst, Fort Cumberland and Sackville, forming one of the most valuable additions ever made to the population of this Province. This region was, therefore, fairly well settled when the Loyalists arrived, and in consequence has less of the Loyalist element than any other important part of New Brunswick.

A.—Sackville. According to Mr. Milner (in the "Chignecto Post," anniversary number, Sept. 1895), and Huling (The Rhode Island Emigration to Nova Scotia, 1889) some twenty-five familes from Rhode Island settled here in 1761. Other settlers came later, including some thirteen members of a Baptist church from Swansea, Mass. The grant of Sackville of 1765 gives a full list of the settlers, and its later history is traced by Mr. Milner.

B.—Cumberland Township. (For location see map No. 45). This included the Fort Cumberland and Fort Lawrence Ridges, and here the Yorkshire settlers who arrived in 1772, and later, bought land which their descendants occupy to this day.

C.—Petitcodiac. In 1763 several families of German descent from Pennsylvania, ancestors of the leading families of Albert County, arrived at the Petitcodiac, settled on the site of Hillsborough and Surrey, and formed the beginning of the permanent settlement of that region. They increased in numbers and appear to have sent a branch to the Shepody river, for, as is said locally, Germantown Lake and the stream still called German Creek must have taken their origin from some such settlement. But the whole subject of the history of this important colony has not been written, except in a newspaper article by Judge Botsford, in the "Chignecto Post" of January 14, 1886. It is also stated that there were three log houses on the site of Moncton when the Loyalists arrived in 1783, but no other settlements on this river are positively known. Several references to these settlements occur in Black's and Alline's Journals of 1781 and 1782.

No settlement of this period is known to me on the Memramcook, aside, of course, from that of the Acadians who were permitted to settle there in 1767.

No new forts were built in this district in this period, though Fort Cumberland, earlier Beauséjour, was garrisoned through most of the period. After it was captured by the English it was altered somewhat, and improved by the erection of outworks, a special magazine, etc. (Archives, 1884, xlvii.) With its surroundings, it is shown on the accompanying map No. 44, which is based partly upon a plan in the Crown Land office, and partly upon measurements by the author. The trenches, mortar battery sites, outworks, etc., are still all plainly to be seen, as shown on the map.

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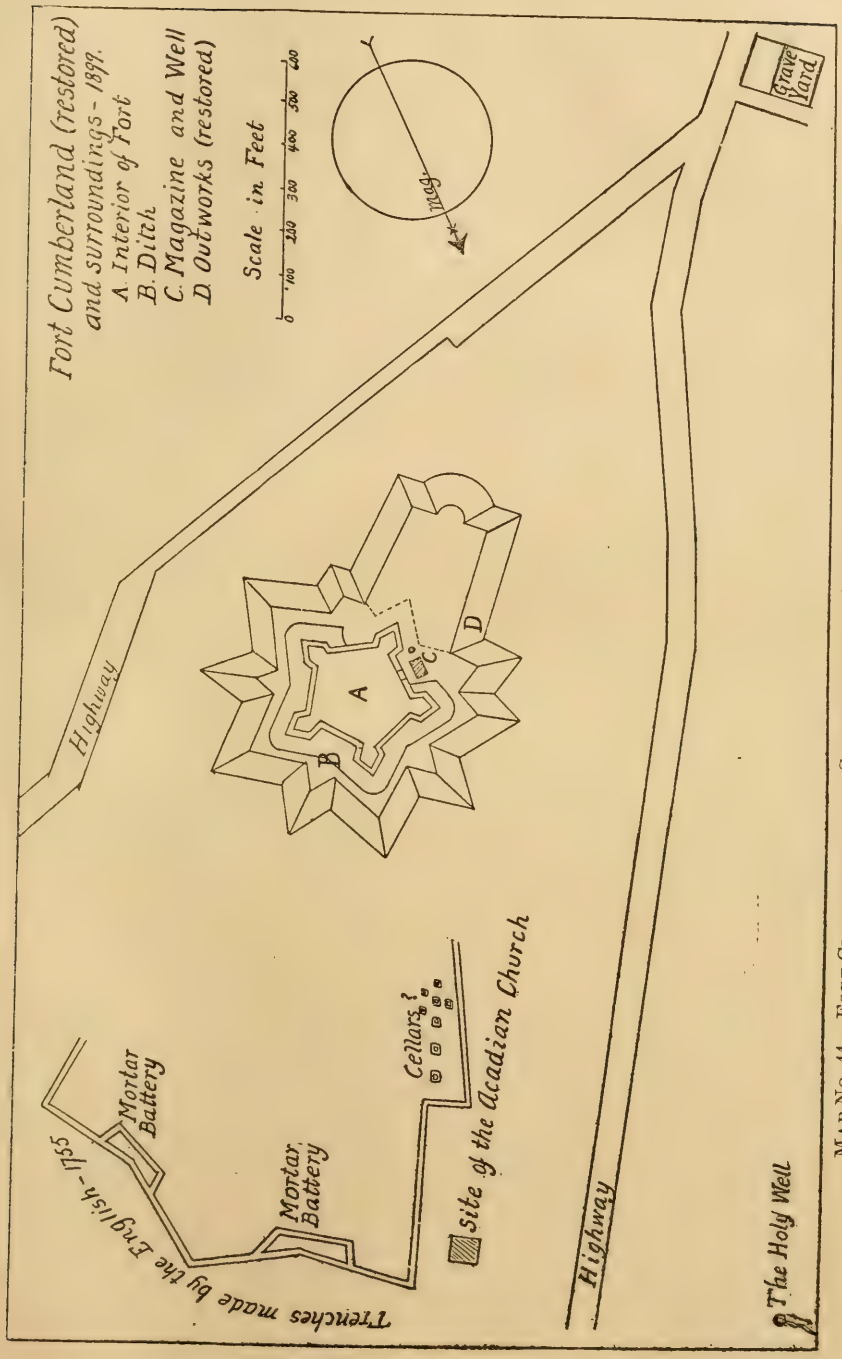
[1] In comparing the fort on this map, No. 44, with that of Beauséjour, on map No. 28, the corresponding positions may be found from the compass lines.



MAP NO. 44. FORT CUMBERLAND AND SURROUNDINGS. BASED PARTLY ON AN OLD PLAN; × 7/23.

Fort Gaspereau was re-named Monckton, but was soon abandoned. In front of its site is a small burial-ground (map No. 30), the oldest in New Brunswick containing monuments, and of great historic interest.

4. The Richibucto District.

In all this district, from Baye Verte to Cape Escuminac, there is not a single settlement of this period known to me. There were some extensive grants, later to be referred to, but these were not settled. There were of course Acadian settlements, already mentioned.

5. The Miramichi District.

No history of the settlements of this period has been attempted beyond the references in Cooney, but in any case they were not important. The whole North Shore was geographically too remote to be affected by the New England immigration, and it appears to have received absolutely none of it, and such settlement as it did receive came directly from England.

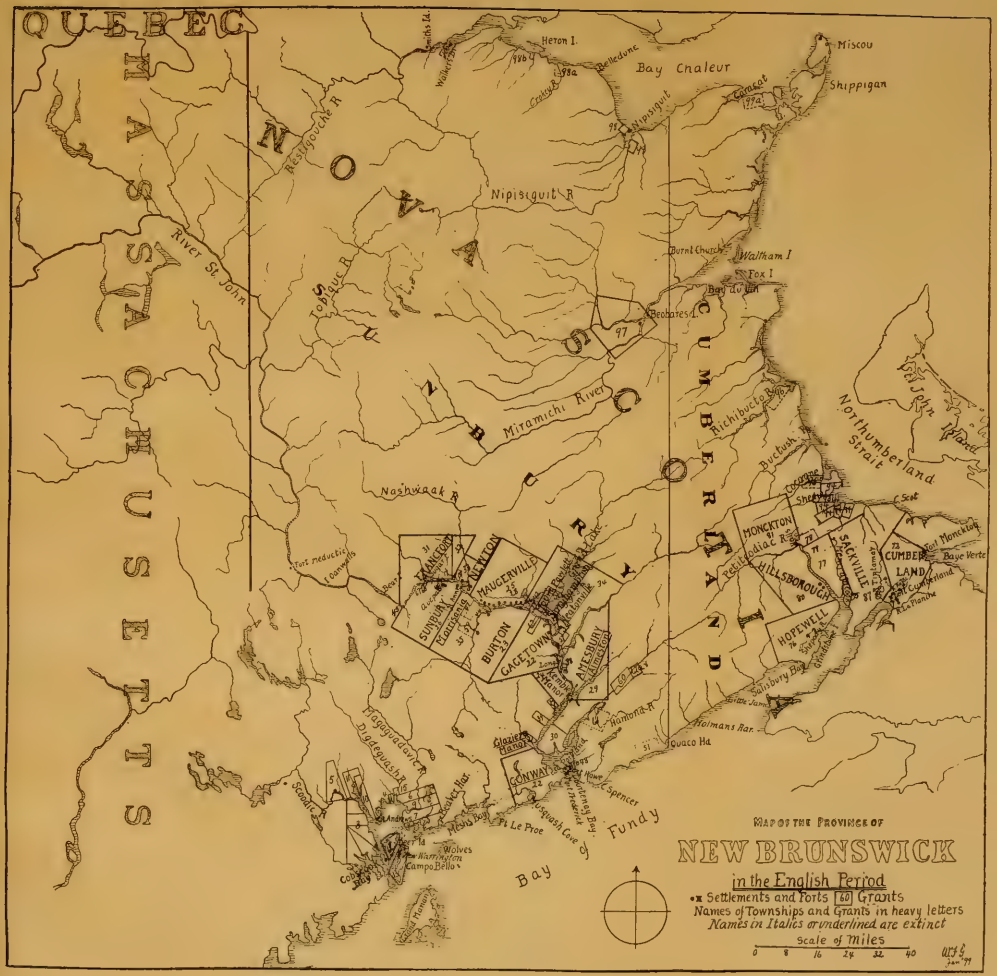
In 1764 William Davidson and John Cort came to Miramichi from Scotland, and the next year obtained a large grant on this river, and with the aid of a few others who came later, of whom an account, probably accurate, is given by Cooney, carried on an extensive salmon fishery and trade with the Indians. The Blakes and Murdochs are also said to be pre-Loyalist settlers, and Cooney mentions others, some of whom came from St. Johns, now Prince Edward, Island. There is in the Public Record office a valuable map (see Archives, 1895, N. B., 3), which shows the Miramichi on a large scale, with the exact sites of the houses of the settlers, apparently uninfluenced by the Loyalist period, and this map is of the greatest value for the local historian of Miramichi. Matter of interest in this connection is given also by Raymond in his "The North Shore."

6. The Nepisiguit District.

In all this district, aside of course from Acadian settlers, we know of but a single attempt at settlement, that of Commodore Walker, of which an account is given by Cooney, which is apparently trustworthy. Walker settled on Bathurst harbour about 1766, at Alston Point, where he had an extensive trading establishment, with a branch at Restigouche. He was ruined, however, by the attacks of American privateers during the early part of the revolution, and later returned to England. The site of his establishment is well known and is shown on map No. 35.[1] There are references to him in Archives 1894, 301, 304.[2] The several grants of this

[1] See also Raymond, Coll. N. B. Hist. Soc., II., 126.

[2] Cooney says he had a residence also at Youghall, and a plan of the harbour of 1784, given (with, however, several additions of later date) in Coll. N. B. Hist. Soc., II., 126, shows houses here as well as at Alston Point.



Map No. 45.—Map of New Brunswick in the English Period.

period about Bathurst harbour are later to be mentioned. In 1775 two men named Fry and Urquhart were carrying on a fishery at Miscou (Archives 1894, 331). The lake at the northern end of the island is to-day called *Fry's Lake* (Map No. 34), which no doubt locates his residence.

7. *The Restigouche District.*

In all this district we know positively of but two settlements belonging to this period. One of these was the establishment maintained by Walker as a branch of that on Bathurst harbour. It is said that Walker's Brook takes its name from him, in which case it probably marks the site of this trading post, though its site is locally unknown. Again, it is stated in a document of 1775 (Archives, 1894, 327, 329), that John Shoolbred had a settlement in the Bay Chaleurs, and as his grant in 1776 covered Walker's Brook and Smith's Island, it must have been in that vicinity. A document of this year speaks of his having carried on the salmon fishery for many years at Restigouche.

2. The Township and Other Grants.

No list of the land grants of this period in New Brunswick, important though they are to our history, has yet been published. In the following list I have given all that are found recorded in the Grant Books at the Crown Land Office in Fredericton, which are supposed to contain all that were made by the Nova Scotia Government prior to 1784 in what is now New Brunswick. There were, however, a few made which are not in the New Brunswick records, but these, when known to me, are included, and the list must be fairly complete. As one comes to the year 1784, it becomes difficult to distinguish those belonging to this period from some of those belonging to the Loyalist period, but I have tried to separate them. On the map (No. 45) the scale is so small that it has been impossible to show at all some of the smaller grants, and it has been necessary to apply names only to the townships and some of the larger grants, and for the remainder to use numbers which always correspond to the numbers in the list following. In cases where small grants were made in townships, such as Maugerville, they are not shown on the map, though they stand with a number in the list. Of course, the boundaries of most of the townships, etc., on the map, are only approximate, though I think they are closely so, and where they afterwards became parish or county boundaries they are exact. Where I am not sure of boundaries, they are given in dotted lines. The abbreviation *esch.* after a grant in the list means that it is marked escheated in the Grant Book at Fredericton, but far more were really escheated than are thus marked.

I. The Passamaquoddy District.

The grants of this period are fully described in the Courier series and merely a list of them must suffice here. Their locations are shown on the accompanying map No. 45. Particularly valuable for their location is a large undated map of Passamaquoddy in the Crown Land Office at Fredericton, based upon Morris' map of 1765. Of the large grants only that to the Owens escaped forfeiture for non-fulfilment of conditions, though in the case of Deer Island a later grant was made to its purchaser.

1. To Capt. Sheriff and Lieut. Gamble, at the Ledge; known only by a reference in Tucker's Grant; size and date unknown. Perhaps only a reservation.
2. **1765**—Oct. 18. Perkins (Indian) Island was granted with other lands on the St. John to Thomas Falconer and others (i. e., No. 23 below).
3. Oct. 31. To Francis Bernard and four others, 100,000 acres between the Cobscook and Scoodic.
4. **1767**—March 28. James Boyd; 1,000 a. at the mouth of the Bocabec (not Dickawasset as in grant book).
5. July —. To John Tucker, 20,000 a. on Scoodic River.
6. July 17. Augustin Oldham, 10,000 a. east of the Digdeguash. (Esch.)
7. Aug. 21. John Mascareen, 10,000 a. south of the Magaguadavic. Gave origin to the present name of the locality. (Esch. 1785.)
8. To Thomas Gambel. S. of Mascareen's Grant, at Letite, 2,000 a. Known only from an old map.
9. Aug. 21. Edward Crosby, 10,000 a. north of the Mascareen Grant.
10. Aug. 21. Joseph William Gorham, 10,000 a. east side of Scoodic, near its mouth.
11. Aug. 21. Jo. William Gorham, 10,000 a., including Oak Bay.
12. Aug. 21. Joseph Gorham, Deer Island and an island adjoining.
13. Sept. 30. William Owen and others, Passamaquoddy Outer Island, 4,000 a. Named by them Campobello. This grant holds good to this day, almost the only one in this list which does.
14. **1771**—June 26. William Owen. Three small islands northeast of Campobello.
15. **1774**—April. Captain Thomas Farrel, 2,000 a. at mouth of Digdeguash.

Lord William Campbell applied for a reservation of Grand Manan in 1776, and later attempts were made by his heirs to secure the island. (On which see Howe, Coll. N. B. Hist. Soc. I., 345, also Archives, 1894, 253.)

2. The St. John District.

No complete account of the great grants of this period on the St. John has yet been attempted, though there are many references to the subject in local writings.[1] A map of 1765 by Morris, in the Public Record Office, gives very accurately all of the Townships granted in that year, and is therefore of the greatest importance to the present subject.

[1] The fullest account that has yet appeared is by Raymond, in New Brunswick Magazine, I., 263, and III., 249.

The complicated history of the Simonds and other grants on the east side of the mouth of the St. John (i.e., 20, 48, 65, below) is traced fully, with map, by Raymond in New Brunswick Magazine, III., 1, 129. The enormous size of some of the grants made in this period will at once strike the attention. The township grants were made mostly to members of the "Canada Company," an organization of some 68 officers and others, who took up the lands chiefly upon speculation. The sites of these grants, as far as known, are shown upon the accompanying map No. 45, and as complete a list as I have been able to make of them is as follows.

16. **1763**—Dec. 8. Andrew Ferguson, 600 a. at O. Park [Aucpac], including Sandon [Hart's] Island. (Apparently granted later to the Indians.)
17. Dec. 8. William Ferguson, 400 a. (no other reference), N. side St. John, fronting Sandon [Hart's] Id.
18. **1764**—Dec. 15. Sir Robert Wilmot, 1,000 a., Long Island, and tract on mainland (38 below).
Feb. 10. Stumpel, 20,000 a. on the St. John (Archives, 1894, 261.) Location unknown.
19. **1765**—Mar. 25. Wm. Jeffray and associate, 2,000 a. at Natchoukchich [Nashwaaksis].
20. Oct. 2. James Simonds and 2 others, 2,000 a. on St. John River and Harbour.
21. Oct. 15. Beamsley Perkins Glasier, 5000 a. at mouth of Nerepis (later called **Glasier's Manor**) ; 1000 a. adjoining, June 22, 1784.
22. Oct. 18. Thomas Falconer and 60 others, 100,000 a. in **Gagetown** ; 50,000 a. in **Conway.**
23. Oct. 18. Thomas Falconer and 60 others 100,140 a. in **Burton** and Perkins [Indian] Id. in Passamaquoddy.
24. Oct. 20. Thomas Gage and associates, 20,000 a. on Long Reach. Later called **Kemble Manor.**
25. Oct. 21. Joshua Mauger and others. **Maugerville** Township and Mauger's Island. In 1773, several other grantees.
26. Oct. 31. Thomas Falconer and 65 others, **Sunbury** Township, 125,000 a, except Augh-pack and St. Ann's Point (including 32 below).
27. Oct. 31. Isaac Caton and James Caton, 2,000 a. on Long Reach.
28. Oct. 31. James Chadwell and 64 others, Township of **Maugerville,** 100,000 a.
29. Oct. 31. Alexander MacNutt and 22 others. Township next to Glasier's, 100,000 a. Afterwards called the Township of **Amesbury** or **Almeston.**
30. Oct. 31. Walter Stirling and 9 others, 10,000 a. on Long Reach. (Not esch., but regranted.)
31. Oct. 31. Alexander MacNutt and others ; 100,000 a. on the Keswick, Township of **Francfort** (also called MacNutt's).

The Morris map of 1765 has the following grants (shown on map No. 45), not mentioned in the Grants Book at Fredericton.

32. Oct. 31. Col. Frederick Haldimand and disbanded officers, 25,000 a. near the Nashwaak. This is included in No. 26 above.
33. Oct. 18. Col. Frederick Haldimand and disbanded officers, 25,000 a. on the Nashwaak.

Nos. 32 and 33 later formed Township of **New Town** (on the map misprinted Newton).

34. Matthew Clarkson and others, 100,000 a., a Township on both sides of Grand Lake. Probably but a reserve, never granted.

35. Township reserved, Dec. 24, 1764, for Major Otho Hamilton and others; 100,000 a. between Burton and Sunbury. Never granted. (Afterwards included in Burton.)

36. Francis Morris, 1,000 a. just below Maugerville.

37. Saml Morris, 1,000 a. just below the preceding.

38. Sir Robert Wilmot, 250 a. on E. bank of the St. John, opposite Long Island.

39. Col. Conyngham, 5,000 a. on Long Reach, below Devil's Back.

40. The Indians, 500 a. at Aucpac, including the island, and 4 a. at St. Ann's, including site of the chapel and burying ground. (Reserved 1765, granted 1768.) See 16 and 26 above.

41. **1767**—Feb. 21. Charles Morris, Jr., 10,000 a. S. E. of Sunbury, on St. John. Later called **Morrisania.**

42. Feb. 21. Hezekiah Morris and others, 2,000 a. S. of Maugerville.

43. July 3. Leonard Lockman, 1,000 a. on N. W. boundary Sunbury. (Eschl. 785.)

44. July 23. Arthur Goold, 3000 a. on N. E. of Burton. Later sometimes called Gooldsborough.

45. July 23. Giles Tidmarsh, 1,000 a. in Maugerville.

46. Oct. 9. John Anderson, 1,000 a. at Nashwack Creek.

47. **1769**—Apr. 5. J. F. W. DesBarres, 2,000 a. at Maugerville.

48. **1770**—May 1. James Simonds. 2,000 a. E. side River and Harbour of St. John.

49. July 4. Richard Peabody and 10 others, 3,250 a. in Maugerville. In 1773 there were other grants in this township of which particulars are not given.

50. **1773**—July 17. William Spry, 920 a. on N. E. side of the St. John.

51. Sept. 27. Benonie Danks, 10,000 a. W. of Quaco Hd.

52. **1774**—Mar. 15. William Pawlett, 3,000 a. on River St. John, to be called **Mount Pawlett.**

53. Apr. 2. William Spry, 3000 a. on River St. John, to be called **Sryhampton.**

54. Apr. 2. James Spry Heaton, 2,000 a. on River St John, to be called **Heatonville.**

55. **1779**—Oct. 28. Stephen Peabody, 500 a. in Maugerville.

56. Oct. 28. George Hayward, 1,000 a. in Maugerville.

57. **1780**—Feb. 8. William Shaw, 2,000 a. on River St. John, next Spry's Land.

58. **1781**—May 2. Arthur Goold, Thatch'd Island, 15 a.

59. **1782**—Aug. 3. William Hazen and three others, 8,000 a. on Oromocto River.

60. Aug. 15. Gifred Studholme and six others, 9,500 a. E. of Amesbury, on the Kennebecasis. New grant 5,000 a., "above John Hay's Land," June 10, 1784, named Studville.

61. Dec. 23. Sir Andrew Snape Hamond, 10,000 a. S. of Amesbury. On Hammond River.

62. **1783**—June 7. Lieut. Col. Wm. Spry, 5,000 a. on Upper Bound of Gagetown and 3,000 a. in Gagetown.

62a. June 25. John Hayes, 3,000 a. on Kennebecasis R.

63. Aug. 13. Samuel Hughes, 1,000 a. on N. E. side River St. John, next below Col. Spry.

64. **1783**—Oct. 4. Moses Pickard and five others, 2,000 a. in Maugerville.
65. Oct. 4. Lieut. William Graves, 2,000 a. E. of Fort Howe. (Raymond gives June 29, 1784, as the date of this grant.)
66. **1784**—July 6. Hon. Bryan Finucane, Sugar Id., 500 a.
67. Oct. 15. Lewis Mercure, Bagweet Id. (above Sugar Id).

3. The Petitcodiac—Misseguash District.

The grants of this district are very difficult to trace owing to many rearrangements and re-grants.

68. **1737**—May 4. O'Neal, LaVallière's (Tonges Id.), 100 a.
69. **1760**—May 28. Winckworth Tonge, LaVallières Id., 80 a.
70. May 28. Winckworth Tonge and ten others, 275 a. S. E. of Fort Cumberland.
71. **1763**—Sept. 17. William Best and John Burbridge, 600 a. in Shepody. (Partly esch).
72. Nov. 22. Joseph Morse and 65 others. **Cumberland** Township, 34,500 a. (established in 1757 with somewhat different boundaries).
73. **1764**—Feb. 4. Richard Gibbons, land in Cumberland.
74. **1765**—Mar. 15. Elias Burbridge and James Hardy, 1,500 a. at Shepody. (Partly esch.)
75. May 13. Richard Bulkeley, 20,000 a. E. of mouth of Memramcook. (Esch.)
76. Sept. 24. Major-General Henry Bouquet and four others, **Hopewell** Township, 100,000 a.
77. Oct. 5. Joseph Gorham, 20,000 a. on Petitcodiac.
Joseph Gorham and others, 10,000 a. near the above. (Esch.)
78. Oct. 15. Richard Wright, 10,000 a. on Petitcodiac R.
79. Oct. 22. Charles Proctor and five others. 5,000 a. near Petitcodiac R.
80. Oct. 31. Robert Cummings and four others. **Hillsborough** Township, 100,000 a.
81. Oct. 31. **Monckton** Township 100,000 a.
82. **1766**—July 1. Robert Scott, 2,000 a. in Sackville.
83. Nov. 22. Winckworth Tonge, 74 a. near I. LaVallière.
84. **1767**—Jan. 16. Hibbert Newton, 2,000 a. in Sackville.
85. Dec. 5. Hannah Newton, 500 a. in Sackville.
86. **1771**—June 6. John Eagleson, 500 a. in Cumberland.
87. **1772**—Oct. 5. **Sackville** Township, 100,000 a.
88. Oct. 29. Edward Barron, 2,000 a. in Sackville.
89. **1773**—Jan. 25. Samuel Belew and fifty-nine others, 25,500 a. in Sackville.
90. **1774**—July 22. Jonathan Gay and others, 7,750 a. in Cumberland.
91. July 22. Heirs of Thomas Barnes and thirty others, 12,250 a. in Sackville.
92. **1783**—Sept. 6. Martin Gay and eleven others, 9,000 a. in Hillsborough.

4. The Richibucto District

In 1767 lands were assigned to twenty-four Acadians at Cocagne and Shediac [Murdoch, II., 472], though apparently the Shediac lands were granted to others the next year.

93 } **1768**—Apr. 22. Jos. Williams and four others, lands at Shediac contiguous to
94. } those granted George Anthony Tonyn. (Later sold to Wm. Hanington). (Tonyn's Tract is 93, apparently granted Sept. 30, 1767.)

95. **1782**—Sept. 30. George Burns, 2,000 a. on River Cocagne. (Mentions lands granted here to John Allen, Lieut. of Marines.)

96. **1777**—Mar. 4. Mariot Arbuthnot, Capt. R. N., and two others, 5,400 a. on S. side of River Richibucto.

5. The Miramichi District.

97. **1765**—Oct. 24. William Davidson and John Cort. Part of an island on the E. side of Miramichi. (Archives 1894, 265).

97. Oct. 31. William Davidson and John Cort, 100,000 a. on the Miramichi, starting from Beaubear's Id.

6. The Nepisiguit District

98. **1770**—Nov. 2. Capt. John Allan, 2,000 a. at Nepisiguit. On west side of the harbour. On old plans Ferguson's Point is called Allan's Point.

99. **1784**—Sept. 22. Arthur Goold, 2,000 a. in Nepisiguit Har., including Goolds' (Indian) Id. (Included site of Bathurst, which on old plans is called Goold's Point.)

99a. Mar. 29. Francis Gionnest and thirty-three others, 14,150 a. at Caracat.

7. The Restigouche District.

98a. **1776**—Feb. 17. Lieut. David Coutts, 2,000 a. at Crokey (Jacquet) River.

98b. Jan. 10. Sir Andrew Hamond, 500 a. opposite Heron Id.

100. May 6. John Shoolbred, 5,000 a. at Walker's Brook, including Smith's Island.

V.—THE LOYALIST PERIOD.

Of all of the periods of our history there is none which, from any point of view, can approach this in importance. Yet no one of our historians has attempted to treat it as a unit for this province. It figures prominently in local historical writings, it is true, and Mr. Raymond in particular has given it much attention; but there is no adequate history of it yet in existence. Mr. Hannay has published in the St. John *Telegraph* a "History of the Loyalists," but it is a history of the part they took in the Revolution, and not of their part in the history of New Brunswick.

It is in this paper necessary to confine ourselves to the phases of it which deal with locations, and of these there is but one of importance, i.e., the location of the Loyalist settlements, particularly of the disbanded regiments and other associations. This particular phase of the subject is

also often referred to in local writings, particularly in those of Rev. W. O. Raymond, whose newspaper articles on the History of Carleton County contain the fullest account of it for the St. John that has yet appeared. For Charlotte it has received full treatment in the "Courier series."

When, at the close of the Revolution in 1783, it became necessary to find new homes for the many thousands who were not allowed to remain in their old ones, the attention of the authorities was naturally turned to Nova Scotia, then including New Brunswick. It was a loyal region, easily accessible from New York, where most of the Loyalists were congregated, and one with a great abundance of good lands still awaiting settlement. At this time, however, while comparatively small areas were occupied and in possession of genuine settlers, immense tracts were locked up in the grants of which we have already given an account, and which, although lying nearly or quite vacant, and already forfeit to the Crown, could not be regranted until legally escheated, a process requiring considerable time. Steps in this direction were at once taken, however, and the Loyalists were allowed to settle on the lands; and lots were assigned to them, the grants for which were not issued in many cases until several years after. In consequence of the immense number of new settlers to be located all at once, the need for securing escheats of land in whole or in part, and the necessity for reconciling many conflicting interests among the new settlers themselves, the local authorities found themselves so embarrassed that there was often much delay in assigning locations, and distress on the part of the settlers; and difficulties of this sort had no small part in bringing about the formation of the new province of New Brunswick. It is no part of our present subject to relate further the very interesting history of the locating of the Loyalist settlers, but the few facts we have given must be kept in mind in viewing the many curious features and occasional anomalies in the grants. It will be noticed, for example, that the great grants in Charlotte largely antedate those on the St. John, and many of the Loyalist associations actually had their grants issued there before the settlers were even located on the St. John. This was no doubt in part due to the fact that there was no question about the escheat of most of the pre-Loyalist grants in Charlotte, for, except in the case of Campobello and Deer Island, and a few others of less importance, the grantees had made not the slightest effort to fulfil the conditions of the grants; while on the St. John, in several cases at least, some such attempt had been made, and the escheat was not so certain. In the case of the Loyalist regiments and large associations the land was usually surveyed and divided into lots, which were then assigned in block to the association; the men drew for the separate lots, and were each given a location ticket, which was held until the grant was issued. This preliminary location, and even the subsequent grant, by no means, how-

ever, finally located the settlers. Many were dissatisfied, and sold or abandoned their lots, and often considerable areas were thus abandoned altogether, and after some time were regranted. It often happened, too, that, owing to the abandonment of a number of lots in a large grant, there was some redistribution of the remainder, and addition of new settlers, and a new grant was then issued for the tract, with different boundaries. These various movements, regrants, etc., make it very difficult to trace out the early locations and to say positively which was the actual location of a given association. Moreover, as to these block grants, while some were settled by disbanded regiments, such as the King's American Dragoons, in a single block containing only members of that particular Association, in other cases other Loyalists were admitted; in yet others, such as at Hampsted, disbanded soldiers and civilians from the same locality settled together, while in others the members of a given regiment became distributed through different settlements.

Of the disbanded regiments and other associations the more important were as follows: In Charlotte, the *Royal Fencible Americans* settled on the Magaguadavic, the *Seventy-fourth Highlanders* on the Digdeguash, the *Port Matoon Association* near and at St. Stephen, the *Penobscot Association* at several points near the St. Croix, the *Cape Ann Association* in what is now St. David, and the *Pennfield Association* at Beaver Harbour.

On the St. John, the *King's American Dragoons* settled at Prince William, *Delancey's Brigade* above them, near the present Woodstock, the *King's American Regiment* between the two, the *Pennsylvania Loyalists* on the east bank of the river from below Woodstock to near Nacawicac, the *New Jersey Volunteers* above Fredericton at Kingsclear, the *Queen's Rangers* in Queensbury, the *Royal Guides and Pioneers* above the Keswick, the *New York Volunteers* east of the Keswick, the *Prince of Wales American Regiment* between Keswick and Nashwaaksis, the *Maryland Loyalists* near the mouth of the Nashwaak, the *Forty-second Highlanders* higher up the Nashwaak, and the *King's Orange Rangers* at Quaco. A given regiment did not always have all its land in one block, but often in two or more, and in such cases the different blocks may be recognized by the similar number on the accompanying map No. 46. These are about all the associations that can be traced, though many other Loyalist Regiments were disbanded in New Brunswick, as shown by the list given by Mr. Howe in the Archives Report for 1883 (page 11); but not all in that list were disbanded in New Brunswick, but some in Nova Scotia and in Prince Edward Island. In addition to these associations, there were many cases in which large blocks were granted to a large number of individuals where there is nothing to show why they were associated in this way, and of course there were numerous grants to single individuals and to groups of a few. On the

accompanying map, No. 46, the approximate location of the principal regiments is shown, together with larger grants to different groups of individuals. The locations are often only approximate, for there is no map in existence which shows them, and I have not been able to disentangle the confused thread of grants and regrants and change of boundaries, but the map shows the general locations, and in a general way shows accurately where the Loyalists settled in New Brunswick.

What has so far been said as to Loyalist locations applies almost solely to the Passamaquoddy and St. John districts. At the head of the Bay of Fundy, in Sackville and Westmorland (formerly Cumberland) Townships, there was little Loyalist immigration, but in Dorchester and on the Petitcodiac there was some, though it was insignificant as compared with that of the St. John. As to the North Shore, it may be said that the Loyalist period hardly existed there, but that the English merged directly into the Post-Loyalist period. It is true that some Loyalist families were induced to settle on the Miramichi, and scattered settlers located themselves at other points, but these were mostly the result of expansion of the more ambitious or restless from the St. John. True Loyalist grants on the North Shore can, therefore, be said to be wanting.

Since the early grants are so closely connected with this important period of our history, and no list of them exists, I have given in the following list all of the Loyalist grants that I have been able to find made in the present Province of New Brunswick by the Nova Scotia Government. But after the first grant issued by the New Brunswick Government on March 2, 1785, I have given only those to the greater associations, made from 1785 to 1787. An accurate map and complete list of these Loyalist grants would be of very great service to our history. They are mostly shown in outline in the fine 1786 map in the Public Record office, and on one of about 1784 in the Crown Land office.

1. The Passamaquoddy District.

The grants in this district and their history are fully treated in the Courier series. They are shown approximately on the accompanying map No. 46. The spelling of place names is usually that of the original grants.

1. 1784—Feb. 20. Peter Clinch, 700 a. on Musquaquadavick.
2. Mar. 29. Lieuts. Thomas Fitzsimmons and Colin McNab, 1,000 a. Digdeguash. (Esch.)
3. Mar. 29. Colin Campbell, 2,000 a. at Digdeguash on Passamaquoddy.
4. Mar. 29. Capt. Philip Bailey and 58 others, **Royal Fencible Americans,** 10,150 a. on Magaguadavic.
5. Mar. 29. Doctor William Paine and 19 others, 5,500 a. on Magaguadavic River, Harbours Letite and Letang.
6. Mar. 29. John Curry and 42 others, 15,250 a. on the Digdeguash.

7. **1784**—Apr. 24. Edmund Phelon, 1,000 a. on Magaguadavic.
8. May 13. [30] Patrick McMasters and Daniel McMasters, 2,000 a. on Magaguadavic.
9. July 31. William Gammon and 429 others, lots in **St. Andrews.**
10. Aug. 3. Thomas Wyer and 6 others, 1,534 a. on Oak Point and elsewhere in Charlotte.
11. Aug. 3. Stephen Roberts and 189 others of the **Penobscot Association,** 19,000 a. in Charlotte, in six lots.
12. Sept. 16. John Dunbar and 105 others, 179½ a. garden lots at Scoodic (St. Stephen). (In **Morristown.**)
13. Sept. 16. Capt. Nehemiah Marks and 120 others, **Port Matoon Association,** 19,850 a. on the Scoodic.
14. Sept. 21. Dugald Thompson, ½ lot in St. Andrews.
15. Oct. 1. William Clark and 223 others of the **Cape Ann Association,** 22,600 a. in Charlotte.
16. Oct. 1. Joshua Watson and 6 others, 7,000 a. on north side of Le Proe River, about the harbour.
17. Oct. 1. John Matthewson, 100 a. on the Waweig.
18. Nov. 1. John McLeod and 150 others, town lots of **St. Georges,** Harbour Letang.

All up to this point are Nova Scotia grants, and the list is complete. Following are made by New Brunswick, and are but a few of the more important.

17a. **1790**—Mar. 6. The **Seventy-fourth Association**, on the Digdeguash.
17b. Town of **Belleview**, at Beaver Harbour, to the **Penn's Field** settlers.

2. The St. John District.

19. **1784**—Apr. 24. Penelope Winslow and Sarah Winslow, 400 a. in Conway.
20. May 24. James Peters, 360 a. at Grimross Head.
21. June 10. David Melville, lot in Parr Town.
23. June 10. Gilfred Studholm and 5 others, 5,000 a. above John Hays' land.
24. June 14. Constant Connor, 700 a. on Oromocto.
25. June 22. Frederick Hauser, 800 a. in Gagetown.
26. June 25. William Hazen and James White, 11,000 a. on Kennebecasis Bay near Simonds grant, in return for lands at St. John given up to the Loyalists.
27. June 29. John Boggs and 7 others, lots in Parr Town.
28. July 6. Col. Isaac Allen and 94 others, 14,050 a. eastward of Studholm's grant on the Kennebecasis.
29. July 6. Garret Jacobus and 37 others, 7,243 a. on S.E. side Washedomack Lake.
30. July 6. Lieut.-Col. Gabriel DeVeber and 18 others, 4,600 a. in Conway on Musquash River.
31. July 6. Henry Day and 31 others, 5,600 a. on N.E. side River St. John above Belleisle.

32. **1784**—July 6. Ambrose Shearman, 500 a. on N. bank Oromocto River, and 400 a. on October 15.
33. July 14. Lawrence Buskirk and 66 others, 10,866 a. in Gagetown.
34. July 14. Abijah Waters and 44 others, 7,600 a. on E. bank of Kennebecasis Bay. (Later surrendered, as it was on Hamond's land, not then escheated.)
35. July 14. Daniel Fukes and 53 others, **Maryland Loyalists,** 13,750 a. above Maugerville on the Nashwaak.
36. July 14. James Gaynor and 26 others, 4,509 a. in Kingston.
37. July 14. John Lips and 44 others, 6,800 a. on Grand Bay.
38. July 14. Lieut.-Col. Isaac Allen and 143 others, **New Jersey Volunteers,** 38,450 a. below lands granted Major Lockman on S. side River St. John. (Cancelled in Chancery, 1799).
39. July 14. William Tyng and 131 others, 21,892 a. in Township of Kingston, "heretofore called Almestone."
40. Aug. 3. Asher Coddington and 47 others, 7,600 a. N.W. bank of Long Reach.
41. Aug. 3. Samuel Denny Street, 1,000 a. on W. side of River St. John opposite Middle Island.
42. Aug. 3. Philip John Livingston, 3,000 a. in Gagetown.
43. Aug. 9. Thomas Leonard and 90 others, lots in Parr Town.
44. Aug. 9. Charles Matthew and 5 others, lots in Parr Town.
45. Aug. 11. Matthew Hains and 112 others, 1,120 a. in Conway and Carleton.
46. Aug. 11. James Peters, 1,000 a. on Pescoback Creek at head of Belleisle.
47. Aug. 11. Humphrey Bull and 141 others, 27,750 a. on S. bank Hamond River.
48. Aug. 11. Wm. Tyng, 300 a. in Gagetown.
49. Aug. 14. Rev. James Sayre and 1,184 others, lots in Parr Town.
50. Sept. 3. Joseph Bedle and Paul Bedle, 400 a. on S. bank Kennebecasis near land granted Graham Hamond, son of Sir A. S. Hamond.
51. Sept. 3. Daniel Lyman and 38 others, 13,300 a. on Nashwaak, above Maryland Loyalists.
52. Sept. 3. Malachy O'Loglin and 11 others, 1,800 a. on S.E. side Long Reach.
53. Sept. 3. William Harding and 7 others, 1,100 a. on Belleisle River next Peters' land.
54. Sept. 3. Charles Thomas and 51 others, 8,400 a. at Washademoac.
55. Sept. 3. Richard Walker and 12 others, 2,400 a. at Red Head near St. John.
56. Sept. 3. Joshua Hardcastle and 29 others [Mary Thomas and 30 others], 5,000 a. on Rusiagonis.
57. Sept. 3. Richard Brown and 37 others, 5,400 a. on N.W. bank of Oromocto.
58. Sept. 6. John Munro, 4,000 a. at mouth of Meductic Creek (i.e., Hayes Creek).
59. Sept. 16. Bazil Rorison, 550 a. on N.E. side River St. John below Eccles' land.
60. Sept. 16. Widow Sarah Smith and 5 others, N. bank Kennebecasis opposite Long Island.

61. **1784**—Sept. 16. Samuel Hugh and 73 others, 11,784 a. between Mispec and Quaco.
62. Sept. 16. William King, 350 a. eight miles up Washademoac, N.W. side.
63. Sept. 22. Abraham Van Buskirk and 79 others of the **Orange Rangers,** 14,250 a. at Quaco.
64. Sept. 22. Anthony Egbert and 26 others, 4,400 a. in Conway.
65. Sept. 22. Capt. Samuel Hallet and son, 1,000 a. opposite Indian Island below Muzeroll's house.
66. Sept. 22. Doctor Nehemiah Clarke, 900 a. next below Hallet.
67. Sept. 27. Samuel Hallet and Lieut. Daniel Hallet, lots in Parr Town.
68. Sept. 29. Caleb Jones, lot in Parr Town.
69. Oct. 1. Horner Jones and 95 others, 15,000 a. on S.E. side Grand Lake.
70. Oct. 1. William Garden, 550 a. N.E. side River St. John, above Dr. McGibbin's land.
71. Oct. 1. Lieut. Peter John Smyth, 6 a. at St. Anns Point.
72. Oct. 1. Lieut. David McGibbon, 550 a. above Eccles' land on the River St. John.
73. Oct. 6. James Twaddle, 50 a. at Grimross Head.
74. Oct. 15. Lieut. James Eccles and 19 others, 80 a. on Cleoncore Island [part revoked for non-improvement 1788].
75. Oct. 15. Capt. William Campbell and 15 others of **Prince of Wales American Regiment,** 2,930 a. N.E. side of River St. John next to Jaffray grant.
76. Oct. 15. Robert Brown and 119 others of **DeLancey's 2nd Battalion,** 24,150 a. W. side of River St. John from above Meduxnakeag to two miles below Meductic Island. [The 1st Battalion settled on the east side of the river at upper end of 99; 3rd settled mostly in Queens and Sunbury.]
77. Oct. 15. Mary Sayre and 8 others, 500 a. in Maugerville.
78. Oct. 15. Joseph Garnet and 3 others, 2,400 on Nashwaak.
79. Oct. 15. Lieut. Richard McKinnon, 500 a. west of Orange Rangers, Quaco.

All of the preceding grants were made by Nova Scotia, and the list is intended to be complete. The first New Brunswick grant was made March 2, 1785. Following are the principal grants made to disbanded regiments and large associations between 1786 and 1800:

80. **1786**—Jan. 27. Benjamin Bunnell and 60 others, 9,280 a. on Long Reach and Grand Bay.
81. Jan. 27. John Stevens and 52 others, 9,382 a. Milkish Creek and Kennebecasis Bay and Grand Bay.
82. Jan. 31. Augustin White and 17 Acadians, 2,665 a. between Madamkeswick and Nashwalksis.
83. May 2. Harman Lutkins and 21 others, 2,528 a. above Prince William.
84. May 12. Henry Bettner and 36 others, 1,474 a. Long Island, Kennebecasis.
85. May 12. Jonathan Hawxhurst and 9 others, 2,000 a. on Grand Lake.
85a. June 7. Christopher Carter and 17 others, 4,000 a. on Washademoac.
85b. May 12. William Caldwell and 16 others, 2,840 a. on Washademoac.

86. **1786**—May 19. William Hazen and 17 others, 1,065 a. on Grimross Neck.
87. May 19. Francis Horsman and 54 others, **King's American Dragoons,** 10,975 a. Prince William, above Isaac Allen.
88. June 3. John Cunliffe and 7 others, 2,700 a. on Narquewickack Creek.
89. June 3. Samuel Dowling and 69 others, 14,150 a. on Maquapit and Grand Lakes.
90. June 3. Cornelius Dalley and 57 others, 10,200 a. on N.W. side of Grand Lake.
91. June 23. John Fournie and 42 others, 10,460 a. Salmon River, Kennebecasis.
92. Sept. 8. Jabez Cable and 25 others, 5,108 a. on S.E. side Grand Lake.
93. Sept. 22. Cornelius Nice and 126 others, 17,330 a. on Belleisle Bay.
94. **1787.** Jan. 30. Conrad Stinick and 53 others, 5,308 a. in Burton.
95. Jan. 30. John Althouse and 78 others, **New York Volunteers,** 18,117 a. about Keswick and in Queensbury.
96. Jan. 30. James Brown and 66 others, **Queen's Rangers,** 17,674 a. in Queensbury, York.
97. June 8. Dugald Campbell and 111 others, **42nd Regiment,** 11,343 a. on Nashwaak.
98. Nov. 9. **Royal Guides and Pioneers,** at Crocks Point and Burgoynes Ferry.
99. Aug. 17. William Burns and others of the **Pennsylvania Loyalists.**
97.[1] Aug. 17. **King's American Regiment,** at Eel River.
100. **1799.** Isaac Allen and others, at Mactaquac.

The Acadians at Madawaska received a license of occupation for their lands in 1787 and a grant in 1790.

3. The Petitcodiac-Misseguash District.

101. **1784** Oct. 1. Isaac Deschamps, 1,000 a. Cape Quiddy Harbour and Quiddy River.
102. Oct. 1. John Cox, 1,000 a. at entrance of River Quiddy.
103. Oct. 1. John Davenport Cox and 6 others, 2,000 a. at mouth of Salmon Brook.

These are Nova grants; those by New Brunswick are as follows:

104. **1786.** Mar. 10. Josiah Smith and Wm. Freeman, 17 a. near Fort Cumberland.
105. Oct. 10. John Richardson and 16 others, 4,545 a. on E. side Memramcook River.
106. Oct. 10. John Sherwood and 19 others, 5,213 a. on E. side Memramcook River.
107. Oct. 10. Simon White and 26 others, 6,848 a. on E. side Memramcook.

These appear to be the only grants made in this region by New Brunswick up to the end of 1786.

4. The Richibucto District.

There were no proper Loyalist grants in this district, though a Loyalist, Mr. Powell, settled on the Richibucto in 1787.

[1] The number 97 is accidentally duplicated in the list.

5. *The Miramichi District.*

108. **1786.** Apr. 15. Benj. Marston and John M. Lesdernier, 640 a. on Miramichi River.

109. June 7. William Davidson, 14,540 a., in five tracts, on the Miramichi River.

110. July 19. Widow Catherine Henderson and 7 others, 1,550 a. on Miramichi River.

111. Oct. 10. Jas. Roy and 4 others, 790 a. on N. side Miramichi River.

As already explained, these grants, though in the Loyalist Period, are hardly on the same basis as the true Loyalist grants on the St. John.

6. *The Nepisiguit District.*

There were no Loyalist grants in this district. On February 6th, 1787, license was granted sixteen Acadians to occupy lands at Caraquet, and on April 25, 1787, there were granted 2,757 acres to Joseph Landrie and twelve others at Caraquet.

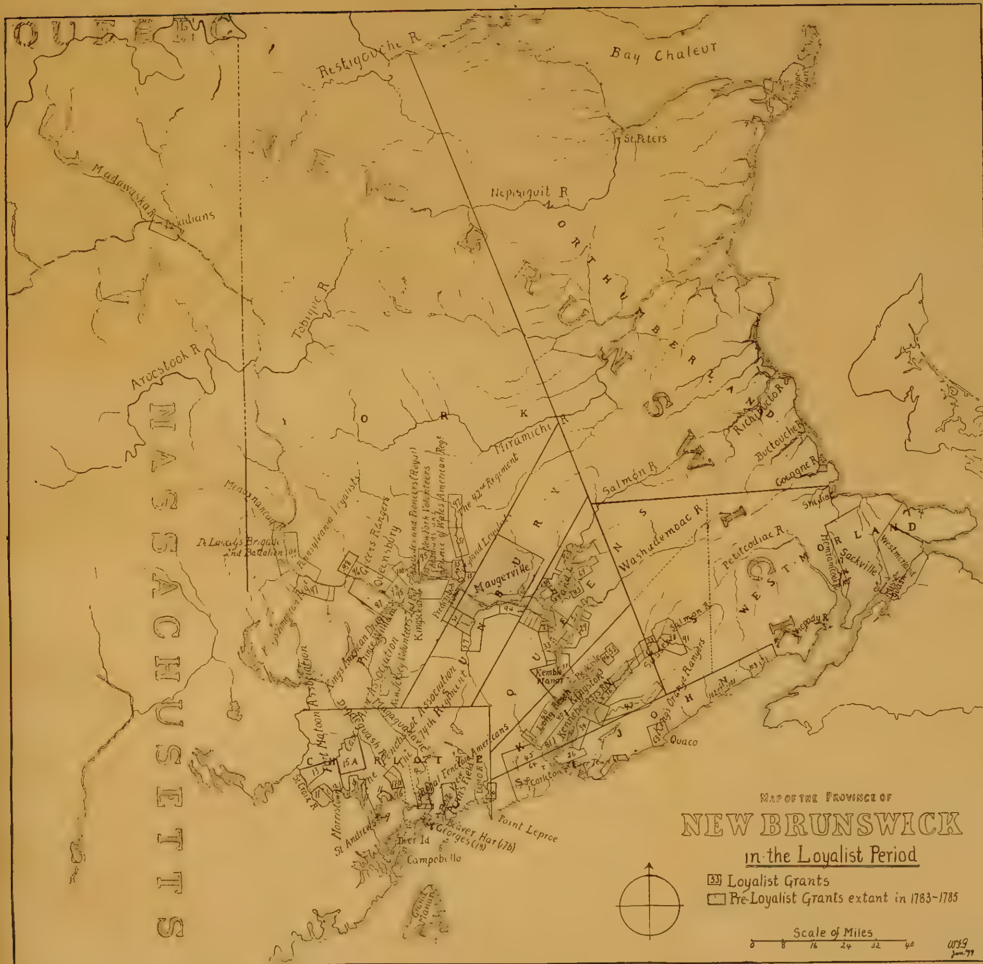
7. *The Restigouche District.*

There were no Loyalist grants in this district, and its modern history began with the arrival of immigrants from Scotland about 1787.

2. The Loyalist Boundaries.

The subject of the evolution of New Brunswick boundaries, international, interprovincial, county and parish, is a subject of the greatest interest to our history, and one of no small complexity and difficulty.[1] I propose to treat it in the next memoir of this series, and will here content myself with a brief reference to the causes of the location of the boundary lines established by the Loyalists, especially the county lines. The accompanying map No. 46 will show the positions of these lines as established by a law of 1786, together with the new position of the western line of Westmorland, established the next year. It is plain that the main principle used in establishing the county lines was that of making the counties centre around the places of most abundant settlement, which in early New Brunswick were always the rivers. This necessitated running the county lines in a general way along the water-sheds between the principal rivers. Thus Charlotte was made to include the settlements about Passamaquoddy, and hence its boundaries were made to run in the wilderness as they do. Westmorland was established to include the settlements around the Petitcodiac and Misseguash system of rivers, and Northumberland to include

[1] A very brief synopsis of the whole subject may be found in the Educational Review Supplementary Readings (St. John, N. B.) No. 5, and in Bulletin of the Natural History Society of New Brunswick, No. xviii.



MAP No. 46.—MAP OF NEW BRUNSWICK IN THE LOYALIST PERIOD.

the Miramichi and other North Shore settlements. Along the St. John came another region too large for a single county, and it was subdivided on the principle of making the county lines cross it at right angles, and, owing to the great curve made by the river, a series of counties was made to radiate from Charlotte. Precisely the same principle controlled the formation of the later counties. Kent was established to include the settlements of which Richibucto is the centre, Gloucester for those centering at Nepisiguit, and Restigouche for those about that river, while Northumberland was left to include those of the Miramichi. The later lines separating Carleton, Victoria and Madawaska, like those lower on the river, run at right angles across it. The line between Westmorland and Albert is the only exception to the general rule. It is a principle everywhere recognized in civilized countries that boundaries of small divisions should run not through settlements but along uninhabited water-sheds, so that the people of the same or contiguous settlements shall belong to the same political division. In the early days of the province, when all travel was by water, the perfectly natural, and indeed only feasible plan, for county formation was this of centering the counties about the inhabited places and making the lines between them run in uninhabited water-sheds, and even to this day that is certainly the most convenient plan. It is necessary that the shire-town shall be readily accessible from all parts of the country, and this is much more the case in an arrangement like the present than it would be if our rivers had been made the county boundaries, as would at first sight seem to be the more natural method. It is easier to cross a river to reach one's shire-town than to cross an uninhabited and wilderness water-shed to reach it, as would be necessary to much of the population if the rivers had been made the boundaries. With these facts in mind, we cannot but admire the wisdom with which Governor Carleton and his council laid out the Loyalist Province into counties, and that wisdom has been justified by the fact that subsequent legislators have had to make but slight changes in the original arrangement, and have ever since followed the same principle when the establishment of new counties became necessary.

As to the parish lines, many of those were adopted naturally from the township boundaries of the preceding period; others were determined by the boundaries of some of the greater grants, while yet others depended upon topographical conditions.

VI. THE POST-LOYALIST PERIOD.

It is not easy to draw a line between the Loyalist Period and that which followed it, for the one merged almost without break into the other. We may distinguish a period of settlement and adjustment of the Loyalist immigrants, lasting perhaps until about 1790, or somewhat later,

followed by a period of expansion of the Loyalist settlements and formation of new ones by the more restless or more enterprising settlers, which lasted until about 1819, when extensive immigration from the Old World began, introducing a new division of the period which lasted until Confederation.

In the Post-Loyalist period there is but little of importance to our present subject, and I shall speak only of three matters—the later forts and military posts, the post-houses on the route from St. John to Quebec, and the semaphore telegraph line from Nova Scotia to Fredericton.

A. Block-houses, etc.

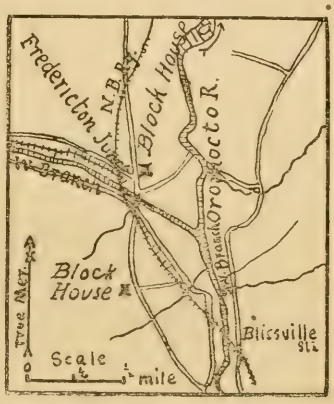
In 1791 Governor Carleton established two military posts on the Upper St. John. (Archives, 1895, N. B., 26, 28.) One of these was at Grand Falls, where it stood on the west side near the falls, on a site still locally well known. The other was at the mouth of the Presqu'île. Its site is still well known as the "Garrison Land." It stood on a highland on the south bank of the Presqu'île close to the St. John.

After 1800, and especially in connection with the war of 1812, several defence works were constructed in the province, notably the Martello tower still standing at Carleton and several block-houses. A list of these is given in a MS. Report of all the Barracks, etc, in New Brunswick in 1825 (now in possession of Mr. Wm. Murdoch, of St. John). The location of those about St. John is fixed for us by the very detailed MS. Field-book of 1848, by Keleher, now in the Crown Land Office. They were as follows: The Johnston block-house, built 1808, stood on Wentworth street between Leinster and King; the Dorchester block-house, built 1807, stood on the military land at the extreme south of the city; another of these, as shown by old plans (as Cunningham's plan of the harbour, 1835), stood to the northwest and near the Martello tower, and was called Fort Drummond, or the Drummond Block-house, built 1813. Another stood a short distance northeast of Fort Howe (Map No. 42). There was also a blockhouse and battery on Partridge Island. The location, form, etc., of all the batteries about St. John mentioned in the 1825 Report can be fixed exactly by the Keleher Field-book. The battery and blockhouse below Spoon Island, referred to in this paper (page 275), was built in 1813, though it is very difficult to account for its local name of the "Old French Fort," unless some earlier work stood upon the same site.

At this time St. Andrews was an exposed and important place, and Fort Tipperary was garrisoned, and later much improved, in a commanding situation back of the town, where its ruins are now perfectly distinct and well known. In 1813 also the three block-houses, with batteries, were built at St. Andrews (though locally they are said to have been built earlier), as is shown beyond question by the Report of 1825. One,

stood at Joes Point; one (still standing) was at the upper end of the town close to the shore, and another stood just behind the present light-house.

Another series of block-houses built at this time were those along the main road from Fredericton to St. Andrews. These are clearly shown on Bonnor's map of 1820 and some others. They are said locally, and probably correctly, to have been designed to intercept deserters making their way from the garrison at Fredericton towards the United States. One of them stood on the east bank of the Magaguadavic, at the end of the bridge on the main road. It was on a little hill exactly at the end of the bridge, and its cellar is still to be seen and the site is well known locally. Another stood near Fredericton Junction. At this place, however, two sites of block-houses are known, as shown on the accompanying Map No. 47, though in neither case can any remains be seen.[1] It is altogether likely that one of them, that on the north side of the river, was built in 1785, on the recommendation of Governor Carleton, who in that year recommended the building of a barracks sufficient for a battalion, near the falls of the Oromocto (Archives, 1895, N. B., 4). The other, south of the river, said to have stood about where Mr. John Seely's house now is, is clearly that shown on Bonnor's map of 1820, though incorrectly, for the topography of his map is here very erroneous. It was built in 1813, as shown by the Report of 1825. Bonnor's map would imply that it stood in the angle between Back Creek and the south branch of the Oromocto, but nothing is known locally of the occurrence of a block-house there, as I have found by personal inquiry, and, moreover, the old road to St. Andrews did not go that way at all. It is, however, correctly shown on Lockwood of 1826. The site assigned on the Map No. 47 places it at the junction of the two roads from Fredericton and Oromocto to form the single old road (now abandoned) to St. Andrews.



MAP NO. 47.—SITES OF BLOCK-HOUSES NEAR FREDERICTON JUNCTION.

The old block-house at Edmundston belongs much later. It was built in 1841, in connection with the "Aroostook War." Its site is well known locally, and its cellar can be seen on the rocky hill just south of the mouth of the Madawaska.

Fort Dufferin, at St. John, was built in recent years. I have no evidence that any earlier defence work stood on that site, though one would expect something of that sort from its position (see page 277).

[1] As I am informed by a resident, to whom I am also indebted for the map.

B. The Post Route to Quebec.

In the early days of the province the St. John River valley formed the natural route from Nova Scotia to Quebec, particularly in winter, when the sea route was closed by ice. For the accommodation of the mail-carriers, and travellers as well, the British Government early established a series of post-houses, in charge of disbanded soldiers, at convenient distances from Fredericton up the river to the Madawaska, up that river to Temiscouata, and thence to Rivière du Loup, from which the route ran along the St. Lawrence to Quebec. These post-houses are marked upon several maps of the last century, particularly on the Peachy map reproduced in the preceding memoir (p. 393) of this series. As there shown, these houses stood about as follows :

1. Just above Longs Creek.
2. Just above the Nacawicac.
3. Near Fort Meductic.
4. Just above the Becaguimec.
5. Just above the Munquart.
6. Just above Tobique.
7. Just above Aroostook.
8. At Grand Falls.
9. About at Siegas.
10. Just below mouth of the Madawaska
11. Half way up Madawaska on east side.
12. Outlet of Temiscouata, east side.
13. At Fort Ingalls, Temiscouata.

There were perhaps also others, or else possibly they were not placed as the maps show, for at Salmon River, above Tobique, it is said, a post-house, kept by a Captain Whitehead, stood just below the mouth of the river on the edge of the intervale, now washed away, and another is said to have stood opposite Andover. I have not tried to locate these houses exactly, but it could doubtless easily be done.

C. The Semaphore Telegraph Line from Halifax to Fredericton.

About 1794[1] it was decided by H. R. H. the Duke of Kent to establish a semaphore telegraph line from Halifax to Fredericton, a system worked by signalling from hill to hill. Though apparently never fully carried out, something was done in this direction, and several "Telegraph Hills" mark the stations to-day. The line crossed from Nova Scotia at Chignecto to just west of Martins Head, where *Telegraph Brook* still marks the place. A plan of 1807 in the Crown Land Office has this inscription on the hill west of the brook, "Telegraph Station formerly proposed." "Some trees were felled on this lot, by order of H. R. H. of Kent, to attempt a telegraph station to communicate with Cape Chignecto, in the year 1800."

The second of the known telegraph hills was at St. John near the Martello tower. Between these two points there must have been others, but

[1] Mr. Howe (Coll. N. B. Hist. Soc., I., 20).

I have not been able to locate them. Mr. Howe speaks of one at Sussex Vale, but this would be greatly out of line. I have been told that Ben Lomond was one of these hills, and also that one of the hills near Quaco Head was thus used, and there is a possibility that Porcupine Mountain, near Mount Theobald, was one of them. Above St. John, the first on the river was just back of Milkish. It is well known locally, and is called "Telegraph Hill." The next was at "Telegraph Hill," below Spoon Island, the hill on whose slope stands the old battery and block-house previously mentioned (pp. 275 and 346). Between these points there must have been at least one station, which was very probably on Bald Mountain, on the Kings and Queens boundary, but I am not sure of this. Nor can I find any other station above on the river. Our histories are silent as to this system and whether it ever came into use. Doubtless in the military records in England a full account of it is to be found.

Shortly after the settlement of the Loyalists, several schools for the education of the Indians were established in New Brunswick by the "Society for the Propagation of the Gospel in New England and the parts adjacent in America." The principal of these were near Woodstock, at Sheffield, and at Sussex, but there were others at Fredericton, Westfield and Miramichi. Their work was not successful, and they were closed one after another, until only that at Sussex, commonly known as the Old Indian College, remained, and it finally ceased to exist in 1826. A full account of these schools is given by Rev. W. O. Raymond in his "New Brunswick Schools of the Olden Time," in the "Educational Review," 1893, vol. vi, 192, 211, 231, and vol. vii, 7, 23, and by Mr. Allison in his "Rev. Oliver Arnold." According to Mr. Raymond (in article 68 of his series in the "Woodstock Dispatch," 1895) the school near Woodstock stood in all probability on Meductic Flat, a little below the Old Fort (see page 225). The site of that at Sheffield is unknown to me. The site of the building at Sussex is described by Allison as "on the northeast corner of the lot on which Trinity Church is now located, and by the small gate leading to that building." It is also located exactly (as the "Indian College") on a manuscript map of St. John and Kings counties in the Crown Land Office.

APPENDIX.

Sources of Information.

The facts upon which the present work is founded are drawn from three sources, which, in the order of their importance, are,—personal investigation of localities, testimony of residents near the localities, and documentary records. It will be convenient to consider these in inverse order.

No single work has yet attempted to cover this subject, but most of the papers upon our local history, of which a gratifyingly large number have appeared within the past few years, contain at least references to it. I have tried to acknowledge the assistance of all these in their proper places. The most complete account of locations of historic sites in New Brunswick is that for the Passamaquoddy region in the "Courier Series" (see Bibliography later), a work deserving far more permanence and accessibility than its appearance in a newspaper allows. Rev. W. O. Raymond, at present New Brunswick's most active and successful historical investigator, gives due attention to this subject of historic sites in most of his writings. Very important are maps, particularly the large scale original survey maps, of which there are many in the Crown Land Office at Fredericton, and several of particular value in the Public Record Office and in the British Museum in London. It is rather a remarkable fact about many of the latter maps that no copies of them exist in the Crown Land Office at Fredericton, though the maps which are there are in admirable order and easily accessible. For books relating to the province, one turns naturally to the Legislative Library at Fredericton, but here he is doomed to bitter disappointment. This library, which ought to be above everything a repository of books relating to New Brunswick, really lacks such works almost utterly, and its chief usefulness to the historian consists in furnishing an illuminating example of what a Legislative Library ought not to be. The works consulted in such studies as this must therefore be sought in libraries abroad.

Very many of the facts in this paper have been obtained from residents near the sites described, and such assistance has, I think, always been acknowledged in the proper place. I wish, however, among these correspondents to mention particularly Rev. J. R. Doucet, of L'Amec, Mr. S. C. W. Chapman, of Dorchester, and Mr. D. Lewis, of Escuminac. It is really surprising to find how willing most men are to respond to inquiries con-

cerning historical matters; and it shows an unexpectedly wide-spread interest in such matters and as widely-spread courtesy. I have also had assistance at many points from Mr. Thos. G. Loggie, of the Crown Land Office, from Rev. W. O. Raymond, Mr. James Vroom, Mr. W. C. Milner, Mr. Victor M Paltsits, and from others too many to mention, to all of whom I wish to express my best thanks.

In the introduction to this paper I pointed out the necessity for personal investigation of localities in such a subject as this. Nearly every site of importance described in this work I have visited and examined. The only important part of New Brunswick I have not visited is Miscou and Shippegan; and, happily, for that region I have had the assistance of one of the most valued of my correspondents, Rev. J. R. Doucet. There are, of course, many sites of great local interest which are hardly important enough to come within the scope of this paper; and there is attractive opportunity in many parts of New Brunswick for the construction of archæological maps much more detailed than those in this work. This is particularly a field workable by local students, and it is commended to teachers and others in New Brunswick who have opportunity and taste for historical pursuits.

The sources of all of the maps in this work are acknowledged in the explanations except in the case of the historical maps. Of these, the four large maps of the periods (i.e., Nos. 12, 39, 45 and 46) were all drawn from, and of the size of, Wilkinson's map, and are reduced in engraving to less than one-fourth. Since they were drawn some slight corrections have been found needful, as follows: In No. 45, Township of Newton should read Newtown. The Seigniory assigned to Martignon north of Grand Lake on No. 39, and also on page 309, is doubtless a mistake; I find the expression "Gouverneur et proprietaire de la Rivière St. Jean depuis la Rivière de Maquo jusqu' aux mines aux dit païs de l'Acadie . . . plus de 50 lieues de front," applies not to Martignon, but to La Tour himself, and refers to his great grant of 1656. Hence the "mines" would be at the head of the Bay of Fundy, and the River Maquo would be some river in Maine. In No. 46, a part of the lands around St. John should be dotted to show persistent pre-Loyalist grants, whose extent may be determined from Mr. Raymond's articles and maps referred to earlier on page 333. On map No. 46, the number 97 is accidentally duplicated, as explained on page 343. As to the other historical maps, the sources are as follows. Most of the older maps mentioned are fully described in the preceding monograph.

No. 24—Isthmus of Chignecto. Topography from Steckel's map of 1874.

Earlier maps containing information are:

Map of the Isthmus by Franquet, 1752. (Map No. 26 of this work).

Plan de L'Isthme de L'Acadie. Paris, 1779, but belonging to 1755.

A Large and Particular Plan of Skegnekto Bay. London, 1755.

Map of the Bason of Chignectou and its Environs in Nova Scotia, From a French draught, Capt. Lewis' Survey of the road to Bay Verte, etc., 1755. Ms. in possession of Mr. F. Allison of Sackville.

Map of the Isthmus in "Mémoirs sur le Canada," about 1755.

Fort Beauséjour and the adjacent country . . . in 1755. In Mante's History of the late war in America.

Part of Map of Nova Scotia or Acadie. By Capt. Montresor. London, 1768.

There is also in the British Museum a plan of the Isthmus of about 1755 by Winckworth Tonge, but this I have not seen.

Survey of the Isthmus in 1837, by Chas. McCurdy. Ms. in Crown Land Office. The Plans of the Isthmus made by Minnette, 1822 ; Hall, 1825, and by Crawley, 1843, in connection with surveys for a Baie Verte Canal, are missing from the Crown Land Office and from the Public Works Department, Ottawa, to which they were loaned.

No. 33—Miramichi. Topography from an Admiralty chart. Facts from Jumeau, 1685, Franquelin, 1686, and the Survey may of 1754, all reproduced in the preceding Monograph of this series. Micheau's map of 1785, mentioned on page 330 is valuable for later history.

No. 34—Miscou and Shippegan. Topography from the Geological Survey map and the Admiralty Chart. Facts from Jumeau, 1685, and Franquelin, 1686, and from Survey map of Miscou, by West, 1820, and of Shippegan, by Harley, 1830. Both are Ms. in the Crown Land Office. Other facts have been given me by Rev. J. R. Doucet, of L'Amec.

No. 35—Bathurst. Topography from a survey map in the Public Works Office, Ottawa. Facts from the Survey map accompanying Goold's Grant of 1784, published (with additions) in Coll. N. B. Hist. Soc. II., 127. Denys' map of 1672 is very imperfect.

No. 36—Restigouche. Topography from the Survey map in the Crown Land Office. There appear to be no earlier historical maps of importance, the French charts of 1778 hardly taking in this part.

No. 37—St. John. Topography from Bruce, 1761.

Earlier maps are :

Map of the Harbor by Champlain, 1604.

Chart of the Harbor, by Bruce, 1761, mentioned above.

Chart of the Entrance to the River St. John, by DesBarres, 1776.

Plan de la Port de la Rivière Saint Jean, Paris, 1779.

Plan of Parr Town, by Paul Bedell, 1783. Ms. in Crown Land Office.

Plan of the City and Harbor of St. John, from an actual Survey taken in the year 1784. By Robert Morse (?)

Mouth of the River St. John, by A. Lockwood, 1818.

Map of the City of Saint John, N.B., by Charles Whitney, 1825. Ms. in Crown Land Office.

Plan of the City and Harbor of St. John, N.B., by Cunningham. Boston, 1835.

The Admiralty Charts.

No. 38—Fredericton. Topography from the Survey map. There are no especial historical maps of this region, other than those of Morris, given earlier, No. 17, and some plans in the Crown Land Office, including the original plan of Fredericton, of 1786, by D. Campbell. To this map the word *Osnaburg* should be added along with Fredericton, and the Township of *Newton* should read *Newtown*, and its date should be 1768.

No. 40—Passamaquoddy. Topography from the Admiralty Chart. The name *Morristown* should appear with St. Stephen.

Earlier maps are:

Charts by Desbarres.

Champlain's Plan of 1604.

Plan by Southack, 1733, in these Transactions, new ser. III., ii., 367.

Plan by Morris, of 1765.

Plan of the Coast from the West passage of Passamquoddy Bay to the River St. John. By Wright, 1772.

A sketch of Passamaquoddy with the adjacent rivers, 1786, Ms. by John Allan.

Plan of 1797, by David Owen, given earlier in this work, page 267.

Plan of Campobello and other islands contiguous, 1839.

Mitchel's map of Passamaquoddy of 1764 is in the Public Record Office, but I have not seen it.

Bibliography and Cartography.

Following is a list of the various works, manuscripts, maps, etc., mentioned more than once in the preceding pages. Works mentioned but once are cited in full at the time. Since the descriptions are here given for the purpose of enabling others to locate the works, they are made only full enough for that purpose, and no attempt is made at Bibliographical completeness.

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ADDENDA.

Page 272, line 3, after No. 37, add: A plan in the City Chamberlain's Office in St. John is said to mark the site of an "old French burial ground" near Fort Frederick.

Page 347, near bottom, after Madawaska, add: A contemporary description of this block-house is given in Lanman, Adventures in the Wilds of the United States and Canada, 1856, I., 306, 307.

IV.—*The Probable Site of the Battle of the Plains of Abraham.*[1]

With plans and illustrations.

"*Sunt lachrymæ rerum, et mentem mortalia tangunt.*"

By ARTHUR G. DOUGHTY.

(Communicated by Sir John Bourinot.)

The memory of the famous battle fought near Quebec on the 13th of September, 1759, the final issue of which gave to England a rich portion of her splendid heritage in North America, has been revived of late in the animated discussions which have taken place as to the exact site of the contest between the French and English.

A difference of opinion has existed; two parties have been formed, and each has offered proof in support of its pretensions in favour of certain ground.

The origin of the controversy may be traced to an intimation on the part of the owners of the property known as the "Race Course," that they were about to divide this land into building lots. Tradition has associated this land with the battle-field, and ground which it is believed was once bedewed with the blood of illustrious dead, is naturally regarded as sacred.

The exigencies of commerce and the demands of progress, have already robbed the city of some of that quaint artistic charm which appealed so eloquently to the student and tourist, and it was therefore quite natural that numerous voices should be raised against the desecration of such an historic spot.

Among the many glowing pages of the annals of Quebec there is not one more brilliant than that which gave to the city her monument to Wolfe and Montcalm—a monument whereon the name of friend and foe are linked together—a monument whereby the conquered shares equal glory with the conqueror. To preserve and set apart any of the

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[1] This paper came too late to be read and discussed in the Section, but in view of the interest taken in the subject, and the judicial spirit which the author brings to its elucidation, the Editor deems it expedient to present it in full to the public as soon as possible. The illustrations and plans, collected with great care by Mr. Doughty, give to the paper a special value, and must assist the student in coming to a correct conclusion. The notes are printed on page 418 of this paper.

remaining portion of the actual battle-field in memory of such an important event in Canadian history, would be a commendable action, and indeed in this age of activity, wherein the past is apt to be forgotten, or absorbed in the present, the isolation of such a spot would be a greater tribute to the heroic dead than even a costly monument of bronze or stone.

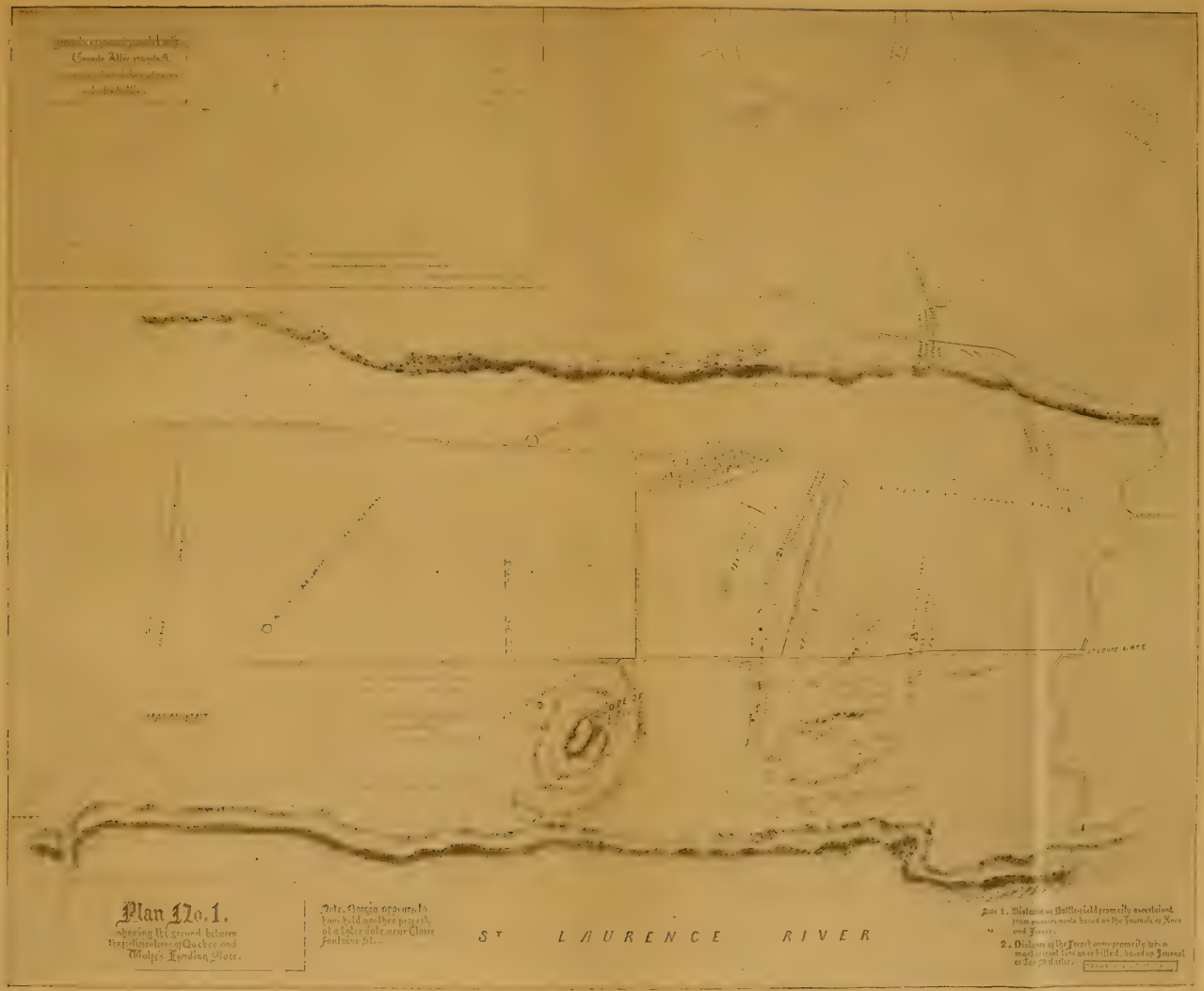
In order that the situation may be understood by those who are unfamiliar with the city, it may be advisable to state that the Plains of Abraham derived their name from Abraham Martin, who owned a tract of land at a short distance from the walls of the city, on the border of Cote Ste. Geneviève (see plan No. 1). In the course of time the whole of the ground between the fortifications and Marchmont, bounded on the north by Cote Ste. Geneviève, and on the south by the River St. Lawrence, was generally termed the "Plains." A distinction, however, appears to have been drawn between the "Heights" and the "Plains" of Abraham, by the English officers after the conquest. General Murray, the first English Governor, refers to "the Heights of Abraham, which entirely command the ramparts of the place at a distance of 800 yards," and again, "the enemy drew their first parallel across the heights at a distance of six hundred yards." The English seem to have named the whole of the ground between the walls of the city and Claire Fontaine street, the "Heights," and the ground on the west of Claire Fontaine street was called by them "The Plains."

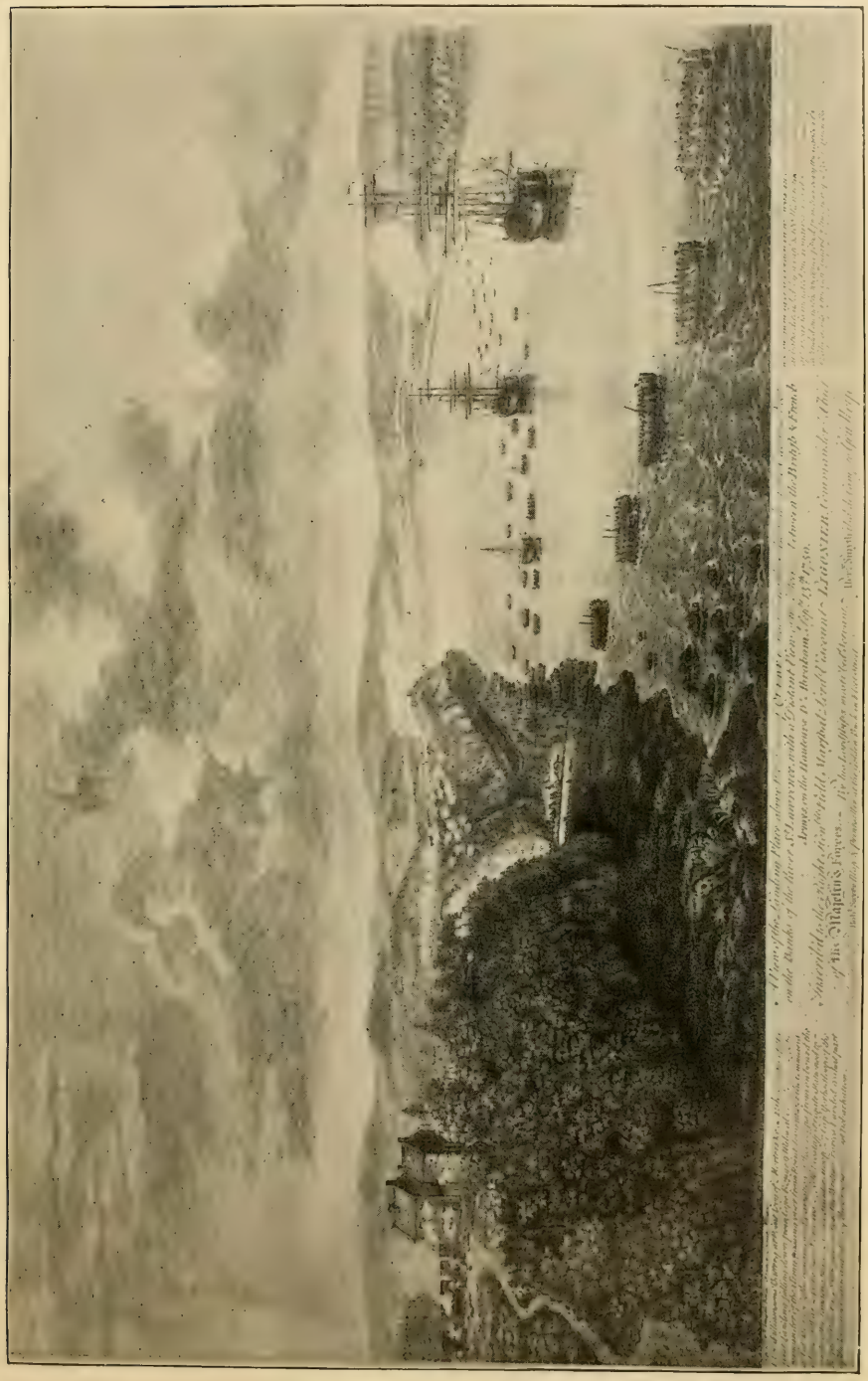
The site of the decisive battle is claimed by one party to be a tract of land bounded on the west by the Marchmont property, and on the east by the Martello Towers. This ground includes the race course. On the other side it is contended that the battle was confined to the limits bounded on the east by the walls of the city, and on the west by de Salaberry street. This territory does not include the race course. (See plan No. 1 and appendix).

With a desire to contribute a few facts towards the solution of this vexed question, I have made certain investigations which are now placed at the disposal of those who are interested in the subject.

At the commencement of my study I decided to base my investigations solely upon the testimony of those who were present at the siege, and, if I were able from their testimony to discover any indication of the location of the field, satisfactory to myself, I intended to seek for confirmation of the position, or for proof to the contrary, in the writings of later historians, or by any other means at my disposal. This plan I have carried out.

An explanation of the plans accompanying this paper is here given.


Plan No. 1.
showing the ground between the fortifications of Quebec and Wolfe's Landing Place.
Note. Borgia appears to have held another property at a later date, near Claire Fontaine St.
St LAURENCE RIVER
Note 1. Distance of Battle-field from city ascertained from measurements based on the Journals of Knox and Jenner.
2. Distance of the French army from city when most of front line on ce killed, based on Journal of Ten M'Martin.



View of the Action of 13th of September, 1759.

Plan No. 1. Is a view of the ground forming the high plateau between the fortifications of the city of Quebec, on the east, and the landing-place of the English army on the morning of the 13th of September, 1759, on the west.

The principal indications on this plan are :—

(*a*) The ridge, known as Buttes à Neveu (Claire Fontaine Street) upon which the French army was drawn up.

(*b*) The slope of the hill upon which a portion of the English line was formed.

(*c*) The probable position of the "House de Borgie," which the light infantry occupied early in the morning of the 13th of Sept.

(*d*) The position of Montcalm's camp, beyond the River St. Charles.

(*e*) The probable route taken by the English army in its "march towards the town in files."

(*f*) The distance of the English camp from the walls of the city, after the battle. This being the place where the battle was fought, according to Colonel Fraser.

(*g*) The distance from the "Ridge" of the front of the French army when "most of the soldiers of the first line were either killed or wounded," according to the testimony of General Malartic.

(*h*) Profile of the ground between St. Louis Gate and the landing place, parallel with Grande Allée, 130 yards south. This profile was made by Mr. Louis A. Vallée, C.E., member of the Society of Civil Engineers, from a large ordnance map attributed to Major Holland. The elevations on the plan were taken from the River St. Lawrence during the years 1785-86. The profile, therefore, represents the appearance of this portion of the ground, 26 years after the battle.

(*i*) The position of the "Bakehouse," in the vicinity of which about two hundred Canadians fought and "most were cut to pieces."

Plan A. Is a portion of an authentic plan of the city of Quebec in force to-day, upon which the positions of the armies have been placed as found on plan B. This plan has been prepared to assist those who are only familiar with modern Quebec, and who may not have an opportunity of consulting old plans. The positions of the armies were determined from careful measurements taken from plan B by Mr. Elzear Charest, architect, and director of Public Works of the Province of Quebec. In the corner of the plan a reduction is given of a

plan made of the environs of Quebec, by Noel Levasseur, in 1766, seven years after the battle. This shows the Borgia property.

Plan B. Is a copy of the plan drawn by a captain in His Majesty's navy, with a view of the action gained by the English, brought from Quebec by an officer of distinction.

This plan was published by Thos. Jeffreys, geographer to the King, and was inscribed to The Right Honourable Wm. Pitt, Secretary of State.

The book to which this plan belongs, was dedicated to General Townshend, who commanded the field on the 13th of September, 1759, after Wolfe had received his fatal wound.

General Murray probably contributed to certain portions of Jeffreys' book, or allowed the editor to make use of his letters and journal, as many events are described in exactly the same words as those found in the letters and journal, especially those referring to General Murray's actions while Governor of Quebec.

Plate C. This plate is made from an old engraving, now very scarce, which was kindly lent to me by Mr. Phileas Gagnon. The engraving was executed from a drawing by Capt. Hy. Smythe, Aide-de-Camp to General Wolfe.

The perspective is not very good, but the details of the four-gun battery on the left of the landing place, are valuable. It will be observed that the line of the army is towards the left, and that the view on the right is broken by some obstruction, possibly the "rising ground" or "hill," so often referred to in the text. This plate is about one-fourth of the size of the engraving.

Plates D and E are sufficiently explained by their titles.

Several quotations are given at length in this paper from the writings of those who were present at the engagement on the 13th of September, 1759, and some of them are perhaps longer than may be considered absolutely necessary; but to those who are unfamiliar with the locality they may be serviceable.

The first authority quoted is Captain John Knox, who served under Wolfe during the campaigns in North America, and who took part in the action of the 13th of September, 1759. The journals were published in London in 1769, and were dedicated to Lieut.-General Sir Jeffery Amherst. Minute details appear to have been recorded almost daily during the years 1758, 1759, and until the close of the war in 1760.

September 12th (1759).—"A soldier of the Royal Americans de-
"serted this day from the south shore, and one came over to us from
"the enemy, who told the General that he belonged to a detachment

"composed of two officers and fifty men who had been sent across the "river to take a prisoner; that the French generals suspect that we are "going higher up, to lay waste the country, and to destroy such ships "and craft as they have got above; and that Monsieur Montcalm will "not be persuaded on to quit his situation, insisting that the flower "of our army are still below the town." "In consequence of this "agreeable intelligence, the following orders were this day issued to "the army.

ORDERS.

"The enemy's force is now divided; great scarcity of provisions "now in their camp and universal discontent among the Canadians. "Our troops below are in readiness to join us; all the light artillery "and tools are embarked at Point Levis, and the troops will land where "the French seem least to expect it. The first body that gets on shore "is to march directly to the enemy and drive them from any little post "they may occupy; the officers must be careful that the succeeding "bodies do not, by any mistake, fire upon those who go on before them. "The battalions must form on the upper ground with expedition, and "be ready to charge whatever presents itself. When the artillery and "troops are landed, a corps will be left to secure the landing place, "while the rest march on and endeavour to bring the French and "Canadians to battle."

This portion of the Journal is quoted for the purpose of showing:

1. That General Wolfe did not expect to meet with much opposition on the ground immediately above his landing place; that is, in the vicinity of the race course, or the Marchmont property.[1]

2. That he was aware that Montcalm still held his position beyond the River St. Charles, the location of which is shown on plan No. 1.

3. That he expected to have to march towards Montcalm's camp to bring the enemy to battle.

It will be seen from these orders that Wolfe was in possession of valuable information as to the enemy's position, and that it was his intention to fight the battle near the city, otherwise it would have been unnecessary to have left troops on the Marchmont property to preserve communication with the landing place.

How these orders were observed may be ascertained from the descriptions given of the movements of the army on the 13th of September, by the various writers hereinafter cited.

The next authority is Brigadier-General Townshend, upon whom devolved the command of the forces after Wolfe received his fatal

wound, early in the engagement. The extract is taken from an official account of the action addressed to the Right Honourable William Pitt, Secretary of State, on the 20th of September, 1759, seven days after the event.

"The boats fell down with the tide, and landed on the north "shore, within a league of Cape Diamond, an hour before day-break; "the rapidity of the tide of ebb carried them a little below the in-"tended place of attack, which obliged the light infantry to scramble "up a woody precipice in order to secure the landing of the troops by "dislodging a Captain's post, which defended the small entrenched "path the troops were to ascend. After a little firing the light in-"fantry gained the top of the precipice, and dispersed the Captain's "post, by which means the troops, with a very little loss from a few "Canadians and Indians in the wood, got up and were immediately "formed. The boats as they emptied, were sent back for the second "embarkation, which I immediately made. Brigadier Murray, who had "been detached with Anstruther's battalion to attack the four-gun "battery upon the left, was recalled by the General, who now saw the "French army crossing the River St. Charles.[2]

"General Wolfe thereupon began to form his line, having his "right covered by the Louisbourg Grenadiers; on the right of these "again he afterwards brought Otway's; to the left of the Grenadiers "were Bragg's, Kennedy's, Lascelle's, Highlanders and Anstruther's; "the right of this body was commanded by Brigadier Monckton, and "on the left by Brigadier Murray; the rear and the left were protected "by Colonel Howe's light infantry, who was returned from the four-"gun battery, before mentioned, which was soon abandoned to him. "General Montcalm having collected the whole of his force from the "Beauport side, and advancing, showed his intention to flank our left, "where I was immediately ordered with General Amherst's battalion, "which I formed *en potence*. My numbers were soon increased by the "arrival of the two battalions of Royal Americans, and Webb's was "drawn up by the General, as a reserve, in eight sub-divisions, with "large intervals. The enemy lined the bushes in their front with "fifteen hundred Indians and Canadians, and I dare say, had placed "most of their best marksmen there, who kept up a very galling, though "irregular fire upon our whole line, who bore it with the greatest pati-"ence and good order, reserving their fire for the main body, now ad-"vancing. This fire of the enemy was, however, checked by our posts "in front, which protected the forming of our own line. The right of "the enemy was composed of half of the troops of the colony, the

"battalions of Bearn and Guienne. Their left was composed of the "remainder of the troops of the colony, and the battalion of Royal "Roussillon. This was, as near as I can guess, their line of battle. "They brought up two pieces of small artillery against us, and we had "been able to bring up but one gun, which, being admirably served, "galled their column exceedingly. My attention to the left will not "permit me to be very exact, with regard to every circumstance which "passed in the centre, much less to the right; but it is most certain "that the enemy formed in good order, and that their attack was very "brisk and animated on that side. Our troops reserved their fire till "within forty yards, which was so well continued, that the enemy "everywhere gave way. It was then that our General fell at the head "of Bragg's and the Louisbourg Grenadiers, advancing with their "bayonets; about the same time General Monckton received his wound "at the head of Lascelle's.

"In front of the opposite battalions fell also M. Montcalm, and his "second in command is since dead of his wounds on board our fleet. "Part of the enemy made a second faint attack; part took to some "thick coppice wood and seemed to make a stand. It was at this "moment that each corps seemed in a manner to exert itself with a "view to its own character. The Grenadiers, Bragg's, Kennedy's and "Lascelle's pressed on with bayonets, Brigadier Murray advancing "briskly with the troops under his command, completed the route on "this side, when the Highlanders, supported by Anstruther's, took to "their broad swords, and drove part into the town, and part to their "works at the bridge on the River St. Charles.

"The action on our left was not so severe. The houses into which "the light infantry were thrown, were so well defended, being sup-"ported by Colonel Howe, who taking post with two companies behind "a small coppice, and frequently sallying upon the flanks of the enemy "during their attack drove them often into heaps; against the front of "which I advanced platoons of Amherst's regiment, which totally pre-"vented the right wing from executing their first intention. Before "this, one of the Royal American battalions had been detached to pre-"serve our communication with our boats; and the other being sent to "occupy the ground which Brigadier Murray's movement had left open. "I remained with Amherst's to support this disposition, and to keep "back the enemy's right, and a body of savages, which waited still "more towards our rear, opposite to the posts of our light infantry, "waiting for an opportunity to fall upon our rear."

The despatch of Townshend is of special value for the following reasons :—

1. It is the official account of the action forwarded to England a few days after the event.

2. Because it gives precise details of the disposition of the army made by Wolfe, and agrees exactly with the order of the regiments as described on plan B.

3. It defines the position of the houses occupied by the light infantry as being opposite to a band of Indians, who waited for an opportunity to fall upon the rear of the English line on the left, and the houses are described in this position on the plan.

4. It mentions the position of the four-gun battery which Wolfe desired to capture on gaining the high ground, near the Marchmont property, as being on the left of the landing place ; and on the plan the battery is shown to be on the left.

It is necessary to note particularly the position of this battery, because it is claimed by Mr. Hawkins that the field was commanded by a four-gun battery, the "ruins of which were seen near the race course" in (1834).

By referring to plan No. 1 or plan B, it will be seen that the guns command the river, and not the field, and, moreover, on the drawing made by the aide-de-camp of General Wolfe, some houses are shown to intervene between the battery and the field. If the battery had been in the position indicated by Mr. Hawkins, it would have been on the right of the landing place.

The ruins of a battery, or redoubt, are described on a plan dated 1785, attributed to Major Holland, but I have been unable to find any evidence proving that a battery existed there in 1759.[3] The Chevalier de Montreuil, in a letter addressed to the Minister, nine days after the battle, mentions that a post was situated between L'Anse des Mères and Foulon, about three-eighths of a mile north. "L'échec que nous "avons eu le malheur d'essuyer le 13 de ce mois, sur les hauteurs de "Québec, a été occasionné par la surprise d'un poste entre L'Anse des "Mères et celle du Foulon, à la distance d'un demi quart de lieue au "Nord audessus de Québec." This would be near the position mentioned on the plan. On a plan published by Mr. Hawkins in 1841, seven years after the publication of his book "Picture of Quebec," the location of this battery is described as "a redoubt to preserve communication with the boats," and no mention is made of a four-gun battery in this direction. It would appear, therefore, that at the time of the engagement this ground was occupied as a French post, and that

the redoubt was constructed by the English after the battle. Further testimony on this point will be offered, all of which confirms the statement made by Townshend, that the battery was on the left of the landing place, as indicated on the plan and on the drawing.

Another important passage in the despatch, bearing particularly upon the orders of Wolfe is, that during the engagement, a detachment was sent to preserve communication with the boats. As this fact would seem to furnish proof that no engagement occurred on the Marchmont property, immediately above the landing, the question will be more fully considered in connection with the further testimony of Knox, quoted from his journal, under the date of September 13th, 1759.

"Before day-break this morning we made a descent upon the north "shore, about half of a quarter of a mile eastward of Sillery, and the "light troops were fortunately, by the rapidity of the current, carried "lower down, between us and Cape Diamond; we had in this debarka-"tion, thirty flat-bottomed boats, containing about sixteen hundred "men. This was a great surprise on the enemy, who, from the natural "strength of the place, did not suspect, and consequently were not "prepared against, so bold an attempt. The chain of centries, which "had been posted along the summit of the heights, galled us a little, "and picked off several men, and a few officers, before our light in-"fantry got up to dislodge them. This grand enterprise was conducted "and executed with great good order and discretion....As soon as we "gained the summit, all was quiet, and not a shot was heard, owing to "the excellent conduct of the light infantry under Colonel Howe; it "was by this time clear daylight. Here we formed again, the river and "the south country in our rear, our right extending to the town, our "left to Sillery, and halted a few minutes.

"The general then detached the light troops to our left to route "the enemy from their battery,[4] and to disable their guns, except they "could be rendered serviceable to the party who were to remain there, "and this service was soon performed." [It will be seen from this last statement, that when the army was formed parallel with the River St. Lawrence, facing the north, the four-gun battery was upon the left, and therefore, it could not have been in the position indicated by Mr. Hawkins in "Picture of Quebec."]

"We then faced to the right and marched towards the town by "files, till we came to the Plains of Abraham, an even piece of ground "which Mr. Wolfe had made choice of while we stood forming upon "the hill.[5] Weather showery; about six o'clock the enemy first made "their appearance upon the heights, between us and the town, where-

"upon we halted, and wheeled to the right, thereby forming the line of "battle. Quebec was then to the eastward of us in the front, with the "enemy under its walls. Our right was flanked by the declivity and "the main river to the southward, and what is called the lower road "leading (westward) from the town, with the river St. Charles and the "north country, were upon our left. If the reader will attend to this "description, observing the cardinal points, he may thereby form as "lively an idea of the battle as if a plan were laid before him, and "though our first disposition was afterwards altered, yet our situation, "with that of the enemy, and the scene of action, could not vary. The "first disposition then was: Grenadiers of Louisbourg on the right, "Forty-seventh regiment (Lascelle's) on the left, Twenty-eighth "(Bragg's) on the right, and Forty-third (Kennedy's) on the left; part "of the light infantry took post in the houses at Sillery, and the re-"mainder occupied a chain of houses which were opportunely situated "for the purpose, and covered our left flank, inclining towards our "rear; the General then advanced some platoons from the Grenadiers "and the Twenty-eighth regiment (Bragg's) below the height on our "right, to annoy the enemy, and to prevent their getting round the "declivity between us and the main river, which they had attempted. "By this time the Fifteenth (Amherst's) and the Thirty-fifth (Otway's) "regiments joined us, who formed a second line, and we were soon after "followed by the Forty-eighth (Webb's) and the Fifty-eighth; (An-"struther's) two battalions of the Sixtieth (Monckton's) and Seventy-"eighth regiments (Highlanders) (Fraser's), by which a new disposi-"tion was made of the whole; viz: 'first line, Thirty-fifth (Otway's) to "the right on a circular form on the slope of the hill; Fifty-eighth (An-"struther's) left; Grenadiers (22nd, 40th, 45th) right; Seventy-eighth "(Fraser's) left; Twenty-eighth (Bragg's) right; Forty-seventh (Las-"celle's) left; Forty-third (Kennedy's) in centre.'

"General Wolfe, Brigadiers Monckton and Murray to our front "line, and the second was composed of the Fifteenth and two battalions "of the Sixtieth regiment, under Brigadier Townshend, with a reserve "of the Forty-eighth regiment, under Colonel Burton, drawn up in "four grand divisions, with large intervals. The enemy now like-"wise formed their line of battle, and got some cannon to play on us, "with round and canister shot, but what galled us most was a body of "Indians and other marksmen they had concealed in the corn opposite "to the front of our right wing, and a coppice that stood opposite to "our centre, inclining towards our left, but the Colonel Hale, by Briga-"dier Monckton's orders, advanced some platoons, alternately from the

"Forty-seventh regiment, which after a few rounds obliged these skul-
"kers to retire. We were now ordered to lie down, and remained some
"time in this position. About eight o'clock we had two pieces of short
"brass six-pounders playing against the enemy, which threw them into
"some confusion, and obliged them to alter their disposition, and Mont-
"calm formed them into three large columns; about nine the two
"armies moved a little nearer to each other. The light cavalry had
"made a faint attempt upon our parties at the battery at Sillery, but
"were soon beat off, and Monsieur de Bougainville, with his troops
"from Cape Rouge, came down to attack the flank of our second line,
"hoping to penetrate there, but by a masterly disposition of Briga-
"dier Townshend, they were forced to desist, and the third bat-
"talion of Royal Americans was then detached to the first ground
"we had formed on after we had gained the heights, to preserve com-
"munication with the beach and our boats. About ten o'clock the
"enemy began to advance briskly in three columns, with loud shouts
"and recovered arms, two of them inclining to the left of our army,
"and the third towards our right, firing obliquely at the two ex-
"tremities of our line from the distance of one hundred and thirty—
"until they came within forty yards; which our troops withstood with
"the greatest intrepidity and firmness, still reserving their fire, and
"paying the strictest obedience to their officers; this uncommon steadi-
"ness, together with the havoc which the grape shot from our field
"pieces made among them, threw them into some disorder, and was
"most critically maintained by a well timed, regular, and heavy dis-
"charge of our small arms, such as they could no longer oppose; here-
"upon they gave way and fled with precipitation so that, by the time
"the cloud of smoke had vanished, our men were again loaded, and,
"profiting by the advantage we had over them, pursued them almost
"to the gates of the town, and the bridge over the little river."

In this portion of his journal Knox refers to the corps by numbers, but on page 74 of his work, I find a table in which the names of the regiments are given. I have, therefore, placed the names in brackets after the numbers, for convenience of reference. It would appear from this account that the first disposition of the line was made from a point about midway between the cliff and the Grande Allée on the right, and from a point midway between Ste. Foye Road and the Grande Allée on the left, and that the second disposition extended the line on the right to the cliff, and on the left to near Cote Ste. Geneviève. This was probably the final disposition of the army made by Wolfe, immediately before the decisive firing, about ten o'clock.

At the commencement of this extract, Knox states that owing to the excellent conduct of the light infantry, not a shot was heard after the army gained the summit; that is, in the vicinity of the race course or the Marchmont property. So far, then, there was no engagement near the landing place. Here the army formed and marched along the Ste. Foye Road towards the town. "And soon gained the great road to Ste. Foye, along which they marched in regular order." (Knox, page 74.) It is worth noticing, that if the four-gun battery had been in the position claimed by Mr. Hawkins, the army would have been compelled to pass it on its march towards the town, and therefore, I think we may conclude that there was no battery here at the time, especially as Knox reports, that after the summit was gained, all was quiet.

While dealing with the ground in the vicinity of the race course, we refer again to the despatch of Townshend, where mention is made that during the engagement, troops were sent to preserve communication with the boats. Knox gives the time at which troops were sent for this purpose, namely, after the line was formed. This was several hours after the landing of the army, and after the French were well in sight. . . . . "About nine the two armies moved a little nearer to each "other. . . . the third battalion of Royal Americans was then detached "to the first ground we had formed on after we had gained the heights, "to preserve communication with the beach and our boats." This proves, I think, that the line of battle was not in the vicinity of the Marchmont property or landing place (see Plan No. 1), because if it had been here, communication would have been insured by the presence of the whole army in its immediate neighbourhood.

The testimony of Knox agrees with that of Townshend on this point, and confirms the evidence afforded by Plan B, that the line of battle was a long distance from the landing place.

Before considering the more important points, such as the exact distance of the English line from the walls of the city at the time of the decisive firing, it is advisable to quote from the journal of Colonel Malcolm Fraser, who served under Wolfe on the 13th of September, 1759.

"Thursday, 13th September (1759). The Light Infantry under "the command of Colonel Howe, immediately landed and mounted the "hill. We were fired on in the boats by the enemy who killed and "wounded a few. In a short time the whole army had landed at a "place called Le Foulon (now Wolfe's Cove), about a mile and a half "above the town of Quebec," and immediately followed the light in-

"fantry up the hill. There was a few tents and a picket of the French "on the top of the hill, whom the light infantry engaged, and took "some of their officers and men prisoners. The main body of our army "soon got to the upper ground after climbing a hill or rather a preci-"pice, of about three hundred yards, very steep and covered with wood "and brush. We had several skirmishes with the Canadians and sav-"ages, till about ten o'clock, when the army formed in line of battle, "having the great River St. Lawrence on the right with the precipice "which we mounted in the morning; on the left a few houses and at "some distance the low ground and wood above the General Hospital "with the River St. Charles; in front the town of Quebec, about a mile "distant; in the rear, a wood occupied by the light infantry (who by "this time had taken possession of the French four-gun battery) and "the third battalion of the Royal Americans. In the space between "which last and the main body, the Forty-eighth was drawn up as a "body of reserve. The army was ordered to march on slowly in line of "battle, and halt several times, till about half an hour after ten, when "the French began to appear in great numbers on the rising ground "between us and the town, and having advanced several parties to "skirmish with us; we did the like. They then got two iron field "pieces to play against our line. Before eleven o'clock we got one "brass field piece up the hill, which being placed in the proper interval "began to play very smartly on the enemy while forming on the little "eminence.

"Their advanced parties continued to annoy us and wounded a "great many men. About this time we observed the enemy formed, "having a bush of short brush wood on their right, which straightened "them in room, and obliged them to form in columns. About eleven "o'clock the French army advanced in columns till they got past the "bush of wood into the plain, when they endeavoured to form in line "of battle, but being galled by our artillery, which consisted of only "one field piece, very well served, we observed them in some confusion. "However, they advanced at a brisk pace till within about thirty or "forty yards of our front, when they gave us the first fire, which did "little execution. We returned it, and continued firing very hot for "about six, or (as some say) eight minutes, when the fire slackening, "and the smoke of the powder vanishing, we observed the main body "of the enemy retreating towards the town, and the rest towards "the River St. Charles. Our regiments were then ordered by Briga-"dier Murray to draw their swords and pursue them; which I dare say "increased their panic but saved many of their lives, whereas, if the

"artillery had been allowed to play and the army advanced regularly "there would have been many more of the enemy killed and wounded, "as we never came up with the main body. In advancing we passed "over a great many dead and wounded, (French regulars mostly) lying "in front of our regiment, who—I mean the Highlanders—to do them "justice, behaved extremely well all day, as did the whole army. After "pursuing the French to the very gates of the town, our regiment was "ordered to form fronting the town, on the ground whereon the French "formed first."

The French army, according to the Chevalier Johnstone, who served under General Montcalm, was drawn up in line of battle at a distance of four hundred yards from the city walls, and this distance may be roughly estimated as about midway between the walls of the city and Claire Fontaine Street. "'His town,'" as he called it—was "defended by our army which covered it, being drawn up in battle "about two hundred fathoms from it." (Johnstone, page 42.)

Fraser, therefore, agrees with Johnstone on this point.

We continue the quotation from the journal of Fraser. "At this "time, the rest of the army came up in good order, General Murray "having then put himself at the head of our regiment, ordered them "to face to the left and march through the bush of wood towards the "General Hospital, when they got a great gun to play upon us from the "town, which, however, did no damage, but we had a few men killed "and officers wounded by some skulking fellows with small arms, from "the bushes and behind the houses in the suburbs of St. Louis and St. "John. After marching a short way through the brush, Brigadier "Murray thought proper to order us to return again to the high road "leading from Porte St. Louis to the Heights of Abraham, where the "battle was fought, and after marching till we got clear of the bushes, "we were ordered to turn to the right and go along the edge of them "towards the bank, at the descent between us and the General Hos-"pital, under which we understood there was a body of the enemy who, "no sooner saw us, than they began firing on us from the bushes "and from the bank; we soon dispossessed them from the bushes, and "from thence kept firing for about a quarter of an hour on those under "cover of the bank, but as they exceeded us greatly in numbers, they "killed and wounded a great many of our men, and killed two officers, "which obliged us to retire a little, and form again, when the 58th "Regiment with the 2nd battalion of Royal Americans having come "up to our assistance, all three making about five hundred men, ad-"vanced against the enemy and drove them first down to the great

"meadow between the hospital and town and afterwards over the "River St. Charles. It was at this time and while in the bushes that "our regiment suffered most."

From the writings of those already quoted, and who were present on the occasion, we have indications of the place where the battle occurred. Knox and Fraser, however, furnish still stronger proof, and give the exact distance from the city. On page 76 of the journal of Knox this passage is found: "Every coppice, brush, or other cover, "that stood on our ground this morning, were cut down before night, "and applied to the use of our new works; the houses were all fortified, "and several redoubts thrown up round our camp, which is about one "thousand yards from the garrison." And in the journal of Fraser, under the date of the 14th of September, these words occur: "We got "ashore our tents and encamped our regiment where they fought the "battle yesterday." The battle, therefore, according to these two officers who were present, was fought at a distance of about one thousand yards from the walls of the city. One thousand yards from the walls is about midway between the English and French lines, as indicated on Plan A.

Townshend, Fraser and Knox, each mention houses situated on the left of the English line; and on Plan B, some houses are shown about 140 yards west of de Salaberry Street. This would nearly agree with Fraser, who estimates their distance at about a mile from the city. Knox gives more definite information, and names one of the proprietors.

On page 97 of his journal a quotation is given from a French manuscript which was brought to him, and which Knox says forms a sequel to his own. "'The British having now no enemy to oppose "'them, on the morning of the 13th scaled the mountain without diffi-"'culty, and soon gained the great road to St. Foy, along which they "'marched in regular order. Our troops instantly stood to their arms, "'filed to the right, and crossed the rivulet of St. Charles, leaving a "'detachment of fifteen hundred men only in our camp for its defence; "'we took post on the heights of Abraham, and there awaited the "'arrival of the enemy. General Wolfe, upon first coming up, had "'ordered a party of light infantry to take possession of the house de "'Borgie from which we attempted to dislodge them; but, after a "'spirited and obstinate attack, we found our efforts without cannon, "'to little purpose.'"

On a plan made by Noel Levasseur, in 1766, seven years after the event, Borgia's property is shown to be 100 yards east of Maple Avenue, on the St. Foye Road. The Chevalier Johnstone also mentions Borgia's

house. On page 43, I find these words: "In effect, a movement your "army made in that moment towards the windmill and Borgia's house, "upon the edge of the height, seemed to favour this conjecture. But "an instant afterwards, the Canadians having set fire to that house and "chased you from it, you retook your former position." I am inclined to think that Johnstone did not refer to the property near Maple Avenue, because on another plan made in 1790, I find that a Borgia owned a property near Claire Fontaine, and close to this property, on the edge of the bank, there is a windmill clearly marked. The English, according to Johnstone, did not occupy this property near Claire Fontaine or capture the windmill. Before they could do so the Canadians had set fire to it. Knox, however, states that the houses were towards the rear of the left of the English line, and therefore, it seems clear that the Borgia property he refers to was the one near Maple Avenue, which agrees exactly with the position of the army as described on the plan. From a careful search among deeds relating to property in this direction, about the time of the battle, I find that there were several properties between Claire Fontaine Street and Maple Avenue, but so far, I have been unable to discover any consecutive row or "chain of houses" west of Maple Avenue.

Colonel Fraser's evidence affords another means of ascertaining the distance of the English line from the city. He states that when the line was first formed, Quebec was about a mile distant. A mile from the city walls is quite near the present toll gate. (See toll gate on Grande Allée, plan A.) Colonel Fraser does not give this as the place where the battle was fought. He adds, that for the space of half an hour after the line was formed, the army marched on slowly and halted several times. "The army was ordered to march on slowly in "line of battle, and halt several times, till about half an hour after ten, "when the French began to appear in great numbers on the rising "ground between us and the town." By referring to Plan A, it will be seen that a very short march would be necessary to bring the army to the line indicated on the plan. Captain Knox also gives some definite information on this point. At ten o'clock, when the final disposition of the army was made, the Thirty-fifth regiment on the right of the English, was disposed in a circular form on the slope of the hill, and from that time "our situation with that of the enemy, and scene "of action, could not vary." It will be seen from the profile on plan No. 1, that the only elevations of any importance on the right of the English, between the city walls and Marchmont, are the points marked A and B. The right of the English line was not formed on the highest

QUEBEC
PLAN
A
COPY OF PART OF PLAN MADE BY
NOTE LEVASSEUR
IN 1766
ST CHARLES
ST CHARLES RIVER
ST ROCH
ST SAUVEUR
ST JOHN WARD
MONTCALM WARD
CITADEL
DIAMOND CAPE
RIVER ST LAWRENCE
RACE COURSE
SEE PLAN No. 2
DRAWN BY C. ST. MICHEL.
MADE IN JUNE 1899 FOR A G DOUGHTY

point of this hill, but on the slope. (This position will be better understood by a reference to the indications of the "ridge" and the "slope of the hill" on plan No. 1.) This was before the battle commenced, when according to Knox and Fraser, the French were still on the rising ground between the English and the town. We have shown that the only rising ground near the town, is Claire Fontaine.

The distance between the highest point of the ridge and the highest point of the hill, is about 500 yards; that is, between the points A and B on the profile.

It may be advisable to ascertain how this position agrees with plan A, and also with the further testimony of those present on the day of the battle.

Knox informs us that "at ten o'clock the enemy began to advance "briskly in three columns, with loud shouts and recovered arms, two of "them inclining to the left of our army, and the third towards our "right, firing obliquely at the two extremities of our line, from a dis-"tance of one hundred and thirty—till they came within forty yards."

Here we have a distance given of one hundred and thirty yards.

How far had the French advanced from the ridge, Claire Fontaine, at this time? We can ascertain this better from another source.

The authority here cited is General Malartic, who served with the regiment of Béarn under Montcalm. On page 283 of his Journal, published at Dijon, he gives a clear account of the movements of the French army on the 13th of September, 1759. The Journal is in French, but I believe the summary I have made to be sufficiently accurate.

On the 13th the water patrol sent word that they heard many boats passing towards the town. At two o'clock the troops were ordered to make for the entrenchments. At the first break of day we heard the cannon from Samos, and some few muskets discharged from the adjoining parts of L'Anse des Mères. The regiment of Guienne was ordered to send two pickets to Abraham's Hill, and to march there in full force, half an hour later. Monsieur de Montcalm has taken position at La Canardière.

Intelligence came to him that the enemy had disembarked between Le Foulon and L'Anse des Mères. The General ordered to be sent there, one picket from each battalion, and 600 of the Montreal men. He (Montcalm) followed them closely, leaving M. de Senesergue, Brigadier-Lieutenant-Colonel of LaSarre, in the Beauport part, with orders for the men of the Government of Three Rivers, and one hundred of the Quebec men to follow him; and the regiment of LaSarre was to be sent to him, as soon as 400 of M. Leborgne's men would arrive.

From the bridge he sent an order to LaSarre, Languedoc, and the 400 men of M. Leborgne, to march with all diligence.

Two minutes later another order commanded Béarn to march, who on the way met the Major-General, and was informed by him that the English were already in battle opposite the city—that he (the Major-General) was going for Royal Roussillon and other troops, and that they were to follow the same road and gain the heights nearest the town. (Les plus près de la ville).

He (Montcalm) arrived at nine o'clock and placed himself between Languedoc and Guienne. The Royal Roussillon joined them half an hour later and took the left. Some platoons of soldiers of the colony, and some Canadians were exchanging shots with the English from behind some brushwood and stones, which were between the two armies (en avant des deux armées). The English, who had their field guns, annoyed us very much with their grape shot. Two guns were sent to us from the town at half past nine, and were placed on the right, from where a few discharges were made. The rest of the Government men arrived at the same hour.

M. de Montcalm passed along the front of the army composed of 2,500 men, and inquired if they were fatigued, and observed the movements of the enemy. Having seen that they were reinforcing, and fearing that they would turn the right of our army, he commanded a march towards them. The regiments pushed forward with good grace, but they had hardly advanced one hundred paces, when the Canadians forming the first line, and the soldiers of the third, fired in an irregular manner, and according to their custom, threw themselves flat upon the ground to reload. This false movement had the effect of breaking up all the battalions. Most of the soldiers of the first line were either killed or wounded by the discharges of the English who were situated on an elevated ground. Those who had thrown themselves upon the ground, after rising made a half turn to the right, took to the city road and went into the suburbs, without it being possible to rally them. M. de Montcalm, wounded in the abdomen, had to be carried into the city. The Major-General ordered that the borders of the suburbs should be lined with troops; a quarter of an hour later, each battalion was ordered to send a picket into the city, and the rest of the army to make for the bridges. M. le Marquis de Vaudreuil, who before the route had come up to the heights, persuaded the Canadians to come up again, but after a few moments firing with the English, they were forced to retire.

From this evidence we learn, that at some time after half past nine, when the French were still close to the town, on the high ground, the

western extremity of which is Buttes à Neveu, or Claire Fontaine, the troops advanced with good grace, but they had only proceeded a distance of 100 paces, when a false movement on the part of the Canadians, disorganized the rest of the battalions, and most of the soldiers of the first line were either killed or wounded by the discharges of the English.

A large number of the French were therefore killed at a distance of about 100 yards from Claire Fontaine.

This statement agrees with Knox, who writes that the camp, after the battle was formed at a distance of 1000 yards from the garrison, and that on the following day, "a flag of truce came from the garrison "this afternoon, requesting permission to bury their dead; all that were "within our reach we had interred before."

If the camp were situated at a distance of 1000 yards from the walls, as stated by Knox; and most of the soldiers of the front line were killed at a distance of one hundred paces from the ridge, or Claire Fontaine, as claimed by Malartic, then the place where the French fell would be about 150 yards in front of the camp. We, therefore, find a close agreement between Malartic on the part of the French, and Knox, on the part of the English. We will now estimate the distance by figures furnished by each of these sources.

Knox states that the French began firing when at a distance of 130 yards from the English, and Malartic says that the French began to fire after they had advanced 100 paces from their ground (Claire Fontaine).

The 130 yards given by Knox, added to the 100 paces given by Malartic, make a total of about 230 yards.

The distance separating the two armies on plan A, presumably before any advance was made (that is just before the battle) is 400 yards. The advance made by the French of 100 paces, must therefore, be deducted from the 400 yards, and this would leave a descrepancy of about 70 yards in the figures furnished by Knox and Malartic. This apparently proves that the positions indicated on plan A are accurate.

We will now compare the lines indicated on plan A with measurements of the ground. The distance between the highest point of the ridge and the highest point of the hill, is about 500 yards. (That is the distance between points A and B on the profile). The distance between the English and French line on plan A is about 400 yards. There is, therefore, a difference of 100 yards, but when we consider that the English line was not formed on the highest point of the hill, but on the slope, the agreement appears very close. If the English line had

been formed on the Marchmont property near the race course, and the French were on the ridge, then the distance between the two armies would have been over three-quarters of a mile.

The Chevalier Johnstone, to whose writings we have referred before, gives further proof of the distance between the armies. On page 41 he refers to the proximity of the English line in these words: "I "was no sooner upon the heights than I perceived our horrible posi- "tion—pressed against the town walls, without provisions for four and "twenty hours, and a moral impossibility for us to retire, being drawn "up in battle within a musket shot of your army," and again, "'His "town,' as he called it—was defended by our army which covered it, "being drawn up in battle about 200 fathoms from it."

Here we have proof of the distance of the French from the walls of the city, and of the distance of the French line from the English line. Pressed against the city walls at a distance of 200 fathoms (400 yards) and within a musket shot of the English.

What was the distance of a musket shot?

Lieutenant-Colonel Crawford Lindsay has kindly furnished me with an extract from Chambers' Encyclopedia, 1882, wherein the range of the musket is thus described :—

Accurate fire....	100 yards.
Effective against detached parties..	150 "
Effective against troops in column.... ..	200 "

And from another source I learn that the maximum range was not more than 250 yeards.

We have seen that the distance from Claire Fontaine, where the French were drawn up, according to several authorities, to Marchmont, is over three-quarters of a mile, and we can hardly believe that a soldier would refer to a distance of 1,320 yards as a musket shot, when the maximum range of the weapon was not more than 250 yards.

Proof that the French and English each had the advantage of an elevated ground is afforded by a journal of the French army, under date of September 13th.

"L'éminence sur laquelle la nôtre était rangée en bataille dominait, "dans quelques points celle qu'occupait les Anglais qui y étaient "couverts, soit par des ravins peu profonds, soit par des clôtures de "champ en palissades; nos troupes presque toutes composées de Cana- "diens fondirent sur l'ennemi avec impétuosité, mais leurs rangs mal "formés se rompirent bientôt, soit par la précipitation avec laquelle on "les fit marcher, soit par l'inégalité du terrain; les Anglais en bon

"ordre essuyèrent sans s'ébranler nos premières décharges. Ils ripos-
"tèrent ensuite avec beaucoup de vivacité, et le mouvement qu'un dé-
"tachement de leur centre d'environ 200 hommes fit en avant, la bayon-
"nette au bout du fusil, suffit pour faire prendre la fuite à presque
"toute notre armée; la déroute ne fut totale que parmi les troupes
"réglées ; les Canadiens accoutumés à reculer à la manière des Sauvages,
"(et des anciens Parthes) et à retourner ensuite à l'ennemi avec plus
"de confiance qu'auparavant se rallièrent en quelques endroits, et à la
"faveur des *petits bois* dont ils étaient environnés, ils forcèrent différens
"corps à plier, mais enfin il fallut céder à la supériorité du nombre."

By this evidence it is seen that the eminence on which the French army was drawn up, was greater than the elevated ground occupied by the English. This agrees exactly with the profile, on which the two elevations are denoted by the letters A and B. It may be interesting to those who are unfamiliar with the city of Quebec, to obtain a few particulars regarding the different levels and the appearance of the ground between the ridge, Claire Fontaine, and the hill; and also between the hill and the centre of the race course, in 1785. The profile, on plan No. 1, gives the elevation of the ground at the particular place designated, but it is not a correct representation of the whole of the ground between the River St. Lawrence and Cote Ste. Geneviève. Many profiles would be necessary for this purpose.

The appearance of the ground between the fortifications of the city and the toll gate on the Grande Allée is deceptive, on account of the number of houses which have been erected. Even a close inspection from available points does not enable one to form a very clear idea of what its aspect could have been at the time of the battle.

Fortunately, a large ordnance map on which the elevations of all this portion of Quebec are marked, has been preserved. This map is attributed to Major Holland, and the elevations on it were taken from the River St. Lawrence during the years 1785-86. It is true that this map was made 26 years after the battle, but it is not probable that there was much alteration during the interval. In order to understand certain passages of the text, it is necessary to have a knowledge of the surface of the ground upon which the battle was fought. A few explanations will be given concerning the levels of the race course, and also of the ground on the south of Grande Allée between the Quebec gaol and Claire Fontaine, at a period 26 years after the event.

We will draw an imaginary line from about the centre of the race course to the summit of the hill upon which the Quebec gaol now stands. The line is nearly parallel with the River St. Lawrence, about

400 yards north; and it is about 500 yards in length. At its commencement, near the centre of the race course, the elevation is 271 feet above the River St. Lawrence. From this point there is almost a gradual rise for a distance of 400 yards, at which point the elevation is 303 feet; showing a rise of 32 feet in a distance of 400 yards. From this point to the end of the line, the difference is between the elevations 303 and 321, showing a rise of 18 feet in 400 yards, and a total rise of 50 feet in 500 yards.

We will now examine the levels of the ground to the south of the Grande Allée, between de Salaberry street and a point west of Claire Fontaine. We will draw an imaginary line nearly parallel with the River St. Lawrence, about 350 yards north. The length of the line is about 400 yards. Commencing at the Quebec gaol, the elevation is 321 feet, and proceeding along the line at intervals of 200 feet the figures are 303, 313, 301, 296, 307, 315. On another line parallel with this, 125 yards from the Grande Allée, the figures are 301, 304, 311, 310, 310, 311. The ground in this direction, nearer to the river, is still more uneven. Here we find levels at a distance of 200 feet, varying between 225 and 285 feet; a difference of 60 feet, in 200 feet.

The ground to-day between Claire Fontaine and the gaol is very uneven, especially at a distance of about 150 yards from the river. At one place, probably 150 yards from the gaol, there is a hillock, and this is no doubt the "petite colline" referred to in the journal of the French army.[7] "Les deux armées séparées par une petite colline se canonnaient "depuis environ une heure."

This "petite colline" which *separated* the two armies could not have been the hill upon which the gaol is situated, because the context explains, that the English occupied an eminence. "L'éminence sur laquelle la nôtre était rangée en bataille dominait, dans quelques points celle *qu'occupait les Anglais.*"

Mention is also made in the journal of the French army, which has already been quoted, of the inequality of the ground between the two armies, and this appears to agree with the descriptions of the ground here given.

Captain Knox speaks of the ground upon which the army halted after its march towards the town in files, as being an "even piece of "ground which Mr. Wolfe had made choice of." The most even piece of ground that I find described on Major Holland's plan, is between the Grande Allée and the St. Foye or St. John's Road. Drawing a line parallel with this road 100 yards south, from a point at right angles

with the boundary of the race course property, and proceeding from this point a distance of 2,800 feet towards Claire Fontaine, the ground is almost flat.

The elevation at the western extremity of this line is 269 feet, and the elevation at the eastern extremity of the line is 271 feet, showing a variation of two feet in a distance of 2,800 feet. Another line parallel with this, 2,000 feet south, (100 yards south of Grande Allée) gives a variation of 24 feet in this distance of 2,800 feet.

From this plan it is apparent that the most even piece of ground was north of the Grande Allée, and the most uneven ground was between the River St. Lawrence and the Grande Allée, bounded on the west by the race course, and on the east by Claire Fontaine.

While considering the appearance of the surface of the ground, it may be interesting to note that a coppice of several hundred feet in area, is shown on this plan, nearly midway between de Salaberry Street and Claire Fontaine, on the St. John's Road. This position, it will be observed, is in the vicinity of the Canadians on the right of the French army, on plan A, and between the English and French lines. Referring to the testimony of Townshend, we find that "the enemy lined the "bushes in their front with fifteen hundred Indians and Canadians, "and, I daresay, had placed most of their best marksmen there, who "kept up a very galling, though irregular fire, upon our whole line."

Knox also refers to this coppice. "But what galled us most was "a body of Indians and other marksmen they had concealed in the "corn opposite to the front of our right wing, and a coppice that stood "opposite to our centre, inclining towards our left."

General Malartic informs us that after the French army gained the heights, "some platoons of soldiers of the colony were exchanging "shots with the English from behind some brushwood and stones "(fredoche ?) which were between the two armies."

The late George Desbarats published in 1871, a Journal of the Siege of Quebec, "by An Officer of the Expedition," bearing the initials, P. M. (Major Moncrief).

At the time of the publication of this journal its authorship was disputed, as it was proved to be an exact copy of the journal of Mr. James Thompson, of Quebec.

Mr. Thompson is said to have assisted Mr. Hawkins in the preparation of his book, "Picture of Quebec."

It is therefore interesting to be able to refer to this source.

In this journal the coppice is described as being situated between the two armies. "In the space between the two armies were some

"clumps of high brush which afforded good cover, and brought on a "skirmishing which was warmly kept up on both sides, during the "assembling and disposition of the troops for a general action.

"Their irregulars consisting of Canadians and Indians, were dis-"persed in flying parties on our flanks, particularly on our left, where "they were very numerous, and before the charge of the main body, "made some weak advances, as if they were about to attack us on this "flank. But General Townshend having ordered two pickets of the "Fifteenth to advance by turn, and fire on them, they hastily retired "to a safe distance." This extract confirms, in every particular, the evidence of Townshend, Knox and Malartic, as to the position of this coppice or brush wood.

We have already shown that according to the evidence of Malartic, many of the French were killed at a short distance from Claire Fontaine. The Chevalier Johnstone also gives the place where many Canadians were killed.

On page 44, we find this passage, "The brave Canadian militia "saw us with heavy hearts, grief and despair, from the other side of "the St. Charles river, cut to pieces upon the heights, stopped as they "were, in the horn work, and prevented by superior orders from rush-"ing to our assistance. About 200 brave and resolute Canadians "rallied in the hollow at the bakehouse,[8] and returned upon the "heights. They fell instantly upon your left wing with incredible "rage; stopped your army for some minutes from pursuing our soldiers "in their flight by attracting your attention to them; resisted, un-"daunted, the shock of your left, and when repulsed, they disputed "the ground inch by inch from the top to the bottom of the height, "pursued by your troops down the valley at the bakehouse, opposite "to the hornwork. These unfortunate heroes—who were most of "them cut to pieces—saved your army the loss of a great many men."

The journal of Major Moncrief, or Mr. James Thompson, from which we give a further extract, gives evidence of fighting and loss within a few yards of the city.

"They were by ten o'clock pursued within a musket shot (200 or "250 yards) of their own walls, and scarcely looked behind them till "they got within them. Their irregulars upon our left moved towards "the town when their line gave way, but still maintained their ground "along the bank on that side, whence, under cover of some coppice "and some brush they kept up a continual fire. Brigadier Murray, "who with Fraser's battalion of Highlanders, the 78th, had pursued "the enemy within musket shot of St. Ursula's bastion, being informed "that all our generals were wounded and the enemy having totally

"disappeared, was now returning to the field of battle, but hearing the "firing of the irregulars still continue, ordered the 78th to beat them "off. A hot skirmish ensued in which the Highlanders suffered a "good deal, but being reinforced by some of the 58th and a battalion "of the Royal Americans, they drove the irregulars helter skelter into "the suburb of St. Roch's and thence towards the bridge over the "River St. Charles. We lay that night under arms and sent a detach-"ment to take possession of the General Hospital, and such of the "enemy as were wounded that day, and lay there, were made prisoners, "the hospital being considered a part of the field of battle." (For the position of coppice and bakehouse, see plan No. 1).

From the evidence we have examined so far, the heavy losses appear to have occurred at a short distance from Claire Fontaine, probably on the right and left of the Grande Allée, and on the ground close to the borders of Cote Ste. Geneviève. A number of Canadians were killed still nearer to the city, and on the bank descending to the hornwork.

Vice-Admiral Saunders in command of the fleet before Quebec, in his letter addressed to the Right Honourable William Pitt, Secretary of State, on the 20th of September, 1759, describes many of the French as having been killed quite close to the walls of the city. "Our "troops received their fire, and reserved their own, advancing till they "were so near as to run in upon them and push them with their "bayonets, by which, in a very little time, the French gave way and "fled to the town in the utmost disorder, and with great loss, for our "troops pursued them quite to the walls, and killed a great many of "them upon the glacis and in the ditch." From these accounts, the whole of the ground east of Wolfe's monument was the battle-field, and as such is sacred.

The testimony that we have hitherto considered has been that of those who were present, and who took part in the engagement of the 13th of September, 1759. The Marquis de Vaudreuil, did not arrive on the field until just after the decisive firing, and therefore he was not an eye-witness of the whole of the battle. In a letter addressed by Vaudreuil to the Minister on the 21st of September, 1759, a brief description of the engagement is given, and although no new facts are presented, it is worth quoting. "J'ai l'honneur de vous rendre compte "que la nuit du 12 au 13 de ce mois, le Général Wolfe ayant fait le "débarquement de son armée à l'Anse des Mères, s'empara des hauteurs "derrière Québec. M. le Marquis de Montcalm, qui en fut le premier "informé, jugea, sans doute, que ce n'étoit qu'un detachement. Ce "Général emporté par son zèle et sa grande vivacité, fit marcher les

"piquets des différens corps, partie des batalions, des Canadiens, et "avança lui-même sans me faire part de ses dispositions....M. le Mar-"quis de Montcalm attaqua malheureusement avant que je l'eusse "joint ; il vit sa défaite dans le même moment, et le désordre si grand "dans les troupes que forcé de se retirer, lui-même y fut blessé mor-"tellement. Lorsque j'arrivai, Monseigneur, au champ de bataille, la "fuite était si générale que je ne pus arrêter le soldat. Je ralliai en-"viron 1,000 Canadiens, qui par leur bonne contenance, arrêtèrent "l'ennemi dans sa poursuite."

The Mayor of Quebec, M. Daine, writing to the minister on the 9th of October, 1759, speaks of the battle as having taken place quite close to the walls of the city.

"J'ay aussi eu l'honneur de vous informer par ma précédente, que "le 13 du même mois, nous avions perdu une bataille, *presque sous les* "*murs de la ville.*"

The Intendant Bigot, who played such an important part in the affairs of the colony, previous to the capitulation, furnishes some interesting particulars concerning the battle, in a letter addressed to the minister, on the 25th of October, 1759. Among other things we learn that a lively engagement occurred near St. John's Gate.

"Enfin la nuit du 12 au 13, les ennemis s'embarquèrent dans des "berges qui étaient à bord de leurs vaisseaux, et passèrent devant les "postes que nous avions depuis celuy de M. de Bougainville, à la ville; "quatre différentes sentinelles se contentèrent de leur crier 'qui vive?' "ils répondirent: 'France,' on les laissa passer sans reconnaitre.

"....Nous fûmes instruits, au jour, au camp, que quelques uns de "nos postes audessus de Québec, avaient été attaqués. M. le Marquis "de Montcalm qui ne comptait pas la chose si sérieuse, n'envoya d'abord "à leur secours que quelques piquets, en se fesant suivre par une grande "partie de notre armée; elle avait diminuée en bonté et en nombre "par 3,000 hommes ou environ qui étaient aux ordres de M. de "Bougainville ; ils étaient tous d'élite puisqu'ils étaient composés de "grenadiers et de volontaires de l'armée tant en troupes qu'en Cana-"diens. M. le Mis. de Montcalm fut bien surpris lorsqu'il fut monté "sur la hauteur derrière la ville, de voir l'armée Anglaise qui se formait "dans la plaine. Il donna ordre de hâter la marche des corps qui "venaient le joindre, et à peine furent-ils arrivés à lui, qu'il marcha "à l'ennemi et l'attaqua. Ces différens corps, dont les bataillons de "la Sarre, Royal Roussillon, Languedoc, Guienne et Béarn étaient, ne "formaient que 3,500 hommes ou environ. Il y en avaient qui vena-"ient d'une lieue et demie, ils n'avaient pas eu le tems de prendre "haleine. Cette petite armée fit deux décharges sur celle des Anglaise,

"qui n'était pareillement que de 3 à 4 mille hommes, mais la nôtre "prit malheureusement la fuite à la première décharge des ennemis, "et elle aurait été entièrement détruite si 8 à 900 Canadiens ne se fus- "sent jettés dans un petit bois qui est près de la Porte St. Jean, d'où "ils firent un feu si nourri sur l'ennemi qu'il fut obligé de s'arrêter "pour lui répondre. ....C'est dans cette retraite, que M. de Mont- "calm reçut une balle dans les reins comme il était prêt d'entrer en "ville par la Porte St. Louis."

The Reverend John Entick, who published a history of the war in 5 vols. in 1763, also mentions the Canadians as being placed on the bank, and on the borders of the bank of Cote Ste. Geneviève, and on his plan, which is apparently the same as Jeffreys, the Canadians are shown to be in this direction.

From a relation by one of the nuns of the General Hospital, addressed to a member of the community in Paris, it appears that a portion of the engagement was witnessed from the windows of the hospital. "Nous vîmes de nos fenêtres ce massacre," and again, "l'ennemi, "maître de la campagne et à deux pas de Notre Maison."

I have visited the General Hospital for the purpose of observing what portion of the ground is visible from the windows, and I do not think that any of the troops could have been seen who were upon the level ground. On the plan it will be noticed that the Canadians are placed on the sloping ground of Cote Ste. Geneviève, and if this position is correct, they would have been seen from the windows of the hospital. It would appear from the writings of Johnstone, that even before Montcalm arrived on the heights, fighting had taken place on this declivity between the Canadians and the English. "When op- "posite M. de Vaudreuil's lodgings, the first news of what had passed "during the night was the sight of your army upon the Heights of "Abraham, firing at the Canadians scattered among the bushes." Vaudreuil's lodgings were beyond the River St. Charles, and the only portion of the heights visible from this place would be the border, near Cote Ste. Geneviève.

All this evidence confirms the accuracy of the plan, so far as the position of the Canadians is concerned.

As many residents of the sister country have evinced a deep interest in the question of the site of the battle of the Plains of Abraham, it may be advisable to give an extract from the journal of a cultured American, Professor Siliman, of Yale College, who visited the battlefield early in the present century. Professor Siliman came to Quebec in the company of some officers, and he appears to have taken a deep interest in everything that he saw. He admits that from a boy he

longed to stand upon the spot where Wolfe died. The journal is dated 1819.

"The Plains of Abraham lie south and west of Quebec, and com-
"mence the moment you leave the walls of the city. The battle was
"particularly severe on the French left, and the English right. This
"ground is very near the St. Lawrence, and but a little distance in
"front of the Citadel, and all the events that passed there, must have
"been distinctly seen by those on the walls of Quebec.[9] It must have
"been a most interesting spectacle, and we can easily enter into the
"feelings of the American French, who viewed their country and their
"city, and their firesides and homes, as involved in the issue of this
"battle. With what emotions then must they have seen their de-
"fenders, not only falling in the ranks, but driven by the furious on-
"set of the enemy to the walls of the city, where they were slaughtered
"by the bayonet and the broad sword, on the very glacis and in the
"ditches, immediately under their eyes."

A brief examination will now be made of the works of more modern authors. The first book we will take is "Montcalm and Wolfe," by Francis Parkman. The extract is from the second volume, page 282.

"He went to reconnoitre the ground, and soon came to the Plains
"of Abraham, so called from Abraham Martin, a pilot known as Maître
"Abraham, who had owned a piece of land here in the early days of
"the colony. The plains were a tract of grass tolerably level in most
"parts, patched here and there with cornfields, studded with clumps
"of bushes and forming a part of the high plateau at the eastern end
"of which Quebec stood. On the south it was bounded by the de-
"clivities along the St. Lawrence, on the north by those along the St.
"Charles, or rather along the meadows through which that lazy stream
"crawled like a writhing snake. At the place Wolfe chose for his
"battle-field, the plateau is less than a mile wide.

"Thither the troops advanced, marched along by files till they
"reached the ground, and then wheeled to form their line of battle,
"which stretched across the plateau and faced the city. It consisted
"of six battalions and the detached grenadiers of Louisbourg, all drawn
"up in ranks, three deep. Its right wing was near the brink of the
"heights along the St. Lawrence, but the left could not reach those
"along the St. Charles. On this side a space was perforce left open,
"and there was a danger of being outflanked. To prevent this, Briga-
"dier Townshend was stationed here with two battalions drawn up at
"right angles with the rest and fronting the St. Charles. The battalion
"of Webb's regiment, under Colonel Burton, formed the reserve, the
"third battalion of Royal Americans was left to guard the landing,

"and Howe's light infantry occupied a wood far in the rear. Wolfe "with Monckton and Murray, commanded the front line on which the "heavy fighting was to fall, and which, when all the troops had arrived, "numbered less than thirty-five hundred men.

"Quebec was not a mile distant, but they could not see it, for a "ridge of broken ground intervened, called Buttes à Neveu, about six "hundred paces off. The first division of troops had scarcely come up "when, about six o'clock this ridge was suddenly thronged with white "uniforms. It was the battalion of Guienne, arrived at the eleventh "hour from its camp by the St. Charles.

"Some time after there was hot firing in the rear. It came from "a detachment of Bougainville's command attacking a house where "some of the light infantry were posted. The assailants were repulsed, "and firing ceased. Light showers fell at intervals, besprinkling the "troops as they patiently stood waiting the event.

"It was towards ten o'clock when, from the high ground on the "right, Wolfe saw that the crisis was near. The French on the ridge "had formed themselves into three bodies, regulars in the centre, regu-"lars and Canadians on the right and left. Two field pieces that had "been dragged up the heights at the Anse de Foulon, fired on them "with grape shot, and the troops rising from the ground, prepared to "receive them. In a few moments more they were in motion. They "came on rapidly, uttering loud shouts and firing as soon as they were "within range. Their ranks, ill ordered at the best, were further con-"fused by a number of Canadians who had been mixed among the "regulars, and who, after hastily firing, threw themselves on the ground "to reload. The British advanced a few rods, then halted and stood "still. When the French were within forty paces the word of com-"mand rang out and a crash of musketry answered all along the line. "The volley was delivered with remarkable precision. In the bat-"talions in the centre, which suffered least from the enemy's bullets, "the simultaneous explosion was afterwards said by the French officers "to have sounded like a cannon shot."

On page 291 of the same volume, when describing the movements of the French, Mr. Parkman writes:

"As they advanced, the country behind the town opened more and "more upon their sight, till at length when opposite Vaudreuil's house, "they saw across the St. Charles, some two miles away, the red ranks "of the British soldiers on the heights beyond.

"'This is serious business,' Montcalm said, and he sent off John-"stone at full gallop to bring up the troops from the centre and left "of the camp.

"The army followed in such order as it might, crossed the bridge "in hot haste, passed the northern rampart of Quebec, entered the "Palace Gate, and pressed on in headlong march along the quaint nar-"row streets of the war-like town; troops of Indians in scalplocks and "war paint, a savage glitter in their deep set eyes, bands of Canadians "whose all was at stake—faith, country and home; the colony regulars, "the battalions of Old France, a torrent of white uniforms and gleam-"ing bayonets, LaSarre, Languedoc, Roussillon, Béarn—victors of Os-"wego, William Henry and Ticonderoga. So they swept on, poured "out upon the plains, some by the Gate of St. Louis and some by that "of St. John, and hurried breathless to where the banners of Guienne "still fluttered on the ridge.

"Montcalm was amazed at what he saw. He expected a detach-"ment, and found an army."

According to Mr. Parkman, at the time the English line was formed, Quebec was not a mile distant. Therefore, the army was on the east side of the Toll Gate.

The writer seems to wish to be precise in his estimate of the distance of the army from the city, for he adds that the city could not be seen because a ridge, Butte à Neveu, intervened, about 600 paces off.

Six hundred paces from the ridge would place the front of the English army on the line occupied by Webb's reserve, on plan A. Mr. Parkman marks an advance from this position, however. "The "British advanced a few rods, then halted, and stood still. When the "French were within forty paces, the word of command rang out and "a crash of musketry answered all along the line."

There is evidently a close agreement between the testimony of Mr. Parkman and the evidence furnished by plan A on this point.

"It was towards ten o'clock, when from the high ground on the "right, Wolfe saw that the crisis was near. The French on the ridge "had formed themselves into three bodies."

By this passage it is proved, that while the English were in the position claimed by Mr. Parkman, that is, a "few rods" less than 600 paces from Butte à Neveu, the French were still on this ridge. Unless the English receded from their position, of which there is no evidence, it is difficult to imagine how any engagement could have taken place either on the race course or on the Marchmont property. There is not a single passage in Parkman, at least, I have not found one, which would imply that the battle occurred further west than the spot already described.

The next book to consider is "Picture of Quebec," published by Mr. Hawkins in 1834, seventy-five years after the battle. "Picture of

To the Right Honourable WILLIAM PITT Esq.r
One of His Majesties most Honourable Privy Council
AND PRINCIPAL SECRETARY OF STATE &c
This Plan is most Humbly Inscribed
most Obedient Humble Servt.
DEFENCES of QUEBEC
Part of the Upper River of St. LAURENCE.
A View of the ACTION gained by the ENGLISH Sep.r 13. 1759. near QUEBEC.
Brought from thence By an OFFICER of Distinction
ENGLISH ARMY
St. Laurence R.
Charlebourg or le Petit Village
FRENCH INCAMPMENT
Beauport
FRENCH INCAMPMENT
Les Batures de Beauport a Shoal Dry at Low Water
GENERAL WOLFE'S CAMP
Point a l'Essay
NORTH CHANNEL
THE ADMIRAL BANK
SAUNDERS
FREGATES
LOWER TOWN
Cape Diamond
ADMIRAL HOLMES'S DIVISION
RIVER St. LAURENCE
Point des Pères
POINT LEVY
DIVISION
POINT OF ORLEANS
MAJOR HARDY'S POST
ISLE OF ORLEANS
Part of the Transports at Anchor
Plan B.
An AUTHENTIC PLAN of the RIVER St. LAURENCE from Sillery, to the Fall of Montmorenci, with the Operations of the SIEGE of QUEBEC under the Command of Vice Adm.l Saunders & Major Gen.l Wolfe
Drawn by a CAPTAIN in his Majesties Navy

Quebec" is an exceedingly interesting work, and by a great many is accepted as an authority of the highest order. Some writers have asserted that Mr. Hawkins was greatly assisted in the preparation of his book by Mr. James Thompson, who was present on the field of battle on the 13th of September, 1759. Whether Mr. Thompson was present, or not, seems to be doubtful, for in a note on page 474 of "Picture of Quebec," Mr. Hawkins explains: "Mr. James Thompson "was not, we understand, actually present with the troops engaged in "the battle of the Plains, being detached on duty. He was, however, "Wolfe's companion in arms at Louisbourg and at Montmorenci, and "though not actually on the spot, was doing duty with the army which "captured Quebec."

We have, however, the journal attributed to Mr. James Thompson, which gives a very clear account of the battle, and we shall therefore be able to compare it with certain passages in Mr. Hawkins' book.

Before proceeding to make extracts from "Picture of Quebec," it is advisable to quote Mr. Hawkins' own words as to the sources of his information. "Another scarce work which was obligingly lent to us, "is 'The Natural and Civil History of the French Dominions in North "and South America, with an historical detail of the acquisitions made "by the British arms in those parts, illustrated by maps and plans.' "This work contains an official plan of the city of Quebec, as it sur-"rendered in 1759, giving the fortifications in the St. Charles river "with military accuracy. We have taken an account of the field of "battle, and the position of the armies, principally from a plan in this "work on a considerable scale, made by an officer of distinction, present "thereat. We have used also another plan of the whole operations on "both sides of the river from the camp at Orleans to the landing at "Wolfe's Cove, drawn by a captain of the navy. The examination of "these and other documents has enabled us to make our descriptions "both exact and authentic." The work which Mr. Hawkins refers to, "is Jeffrey's, and the plans which he mentions are the plans contained in this book. Mr. Hawkins, therefore, took the positions of the army from the plan marked B in this paper, from which the positions on plan A were established.

The first extract given commences on page 343 of "Picture of Quebec." "The exultation of Wolfe on thus finding himself, with "scarcely any loss, on the heights of Abraham, may easily be con-"ceived. After more than two months of solicitude, the object of his "long and anxious wishes was before him—his only remaining hope "was that Montcalm would give him battle—of the result he enter-"tained no doubt. The hour of triumph so long sought for, so eagerly

"expected, was at hand—he was determined that day to decide the "supremacy of England or France, in America, before the walls of her "most important fortress:

"Conspicit in planos hostem descendere campos,
"Oblatumque videt votis sibi mille petitum
"Tempus, in extremos quo mitteret omnia casus."

"The first care of General Wolfe was to capture a four-gun bat-"tery on the left of the British, which was accomplished by Colonel "Howe—the next, to draw up his little army to the best advantage, as "the regiments landed, in order to meet General Montcalm, who was "observed to be on the march from Beauport. Montcalm could "scarcely give credit to the first messenger who brought him the news "of the successful landing of the English. Wolfe's extraordinary "achievement had indeed baffled all his plans, and astonished to the "utmost by this unexpected event, he yet prepared for the crisis with "promptness and courage. He immediately adopted the resolution of "meeting Wolfe in the field and of deciding the fate of Canada in a "pitched battle. In his determination he is said to have acted against "the opinion of the Governor-General, the Marquis de Vaudreuil, who "had come down from Montreal.

"About nine o'clock the enemy advanced in three columns, having "crossed the bridge of boats on the St. Charles. Their force consisted "of two thousand regular troops, five thousand disciplined militia, and "five hundred savages. At ten, Montcalm's line of battle was formed, "at least six deep, having their flanks covered by a thick wood on each "side—along the bushes in front he had thrown about fifteen hundred "Canadians and Indians, whose firing was as galling as it was incessant, "until the battle became general. The official despatches of General "Townshend give full details of this memorable conflict, and of the "subsequent surrender of Quebec."

Mr. Hawkins then gives the letters of General Monckton, Gen. Townshend, Admiral Saunders, and the articles of capitulation. As we have quoted from the despatches of Townshend and Saunders, it is not necessary to repeat them here. It should be observed that Mr. Hawkins speaks of the four-gun battery "*on the left of the British.*"

Later on Mr. Hawkins seems to place this battery on the *right* of the English.

On page 354, Mr. Hawkins proceeds: "Any one who visits the "celebrated Plains of Abraham, the scene of this glorious fight—equally "rich in natural beauty and historic recollections—will admit that no "site could be found better adapted for displaying the evolutions of

"military skill and discipline, or the exertion of physical force and "determined valour.[10] The battle-field presents almost a level surface "from the brink of the St. Lawrence to the St. Foy Road. The Grande "Allée, or road to Cape Rouge, running parallel to that of St. Foy, "passed through its centre. That road was commanded by a field re-"doubt, in all probability the four-gun battery on the English left, which "was captured by the light infantry, as mentioned in General Towns-"hend's letter. The remains are distinctly seen near to the present "race stand. There were also two other redoubts, one upon the rising "ground in the rear of Mr. Campbell's house—the death scene of Wolfe "—and another towards the St. Foy Road, which it was intended to "command. On the site of the country seat called Marchmont, the "property of the Honourable J. Stewart, and at present the residence "of Mr. Daly, Secretary of the Province, there was also a small redoubt, "commanding the entrenched path leading to the Cove. This was "taken possession of by the advanced guard of the light infantry, im-"mediately on ascending the heights. At the period of the battle the "plains were without fences or enclosures,[11] and extended to the walls to "the St. Lewis side. The surface was dotted over with bushes, and the "woods on either flank were more dense than at present, affording shel-"ter to the French and Indian marksmen. In order to understand "the relative position of the two armies, if a line be drawn to the St. "Lawrence from the General Hospital, it will give nearly the front of "the French army at ten o'clock, after Montcalm had deployed into "line. His right reached beyond the St. Foy Road, where he made "dispositions to turn the left of the English. Another parallel line, "somewhat in advance of Mr. C. G. Stewart's house on the St. Foy "Road, will give the front of the British army, before Wolfe charged at "the head of the Grenadiers of the 22nd, 40th and 45th regiments, "who had acquired the honourable title of Louisbourg Grenadiers, from "having been distinguished at the capture of that place, under his own "command, in 1758. To meet the attempt of Montcalm to turn the "British left, General Townshend formed the 15th regiment *en potence*, "or presenting a double front. The light infantry were in the rear of "the left, and the reserve was placed in rear of the right, formed in "eight subdivisions, a good distance apart. The English had been "about four hours in possession of the plains, and were completely pre-"pared to receive them, when the French advanced with great resolu-"tion. The English were ordered to reserve their fire until within "forty yards. They observed these orders most strictly, bearing with "patience the incessant fire of the Canadians and Indians. It is also "stated that Wolfe ordered the men to load with an additional bullet.

"which did great execution. The two Generals, animated with equal "spirit, met each other at the head of their respective troops where the "battle was most severe. Montcalm was on the left of the French, at "the head of Languedoc, Béarne and Guienne—Wolfe on the right of "the English at the head of the 28th and the Louisbourg Grenadiers. "Here the greatest exertions were made under the eyes of the leaders— "the action in the centre and left was comparatively a skirmish. The "severest fighting took place between the right of the race stand and "the Martello towers. The rapidity and effect of the English fire hav- "ing thrown the French into confusion, orders were given even before "the smoke cleared away, to charge with the bayonet. Wolfe exposing "himself at the head of the battalions, was singled out by some Cana- "dian marksmen, on the enemy's left, and had already received a slight "wound in the wrist. Regardless of this, and unwilling to despirit his "troops, he folded his handkerchief round his arm, and putting him- "self at the head of the Grenadiers, led them on to the charge, which "was completely successful. It was bought, however, with the life of "their heroic leader. He was struck with a second ball in the groin, "but still pressed on, and just as the enemy were about to give way, "he received a third ball in the breast, and fell mortally wounded. The "spot consecrated by the fall of General Wolfe, in the charge made by "the Grenadiers upon the left of the French line, will to the latest day "be visited with deep interest and emotion. On the highest ground "considerably in advance of the Martello Towers commanding a "complete view of the field of battle—not far from the fence which "divides the race ground from the enclosures on the east, and opposite "the right of the English—are the remains of a redoubt against which "the attack was directed which Wolfe so gallantly urged on by his per- "sonal example. A few years ago a rock was pointed out as marking "the spot where he actually breathed his last, and in one of the en- "closures near the road is the well whence they brought him water. "It is mentioned in the statistical work of Colonel Bouchette, that one "of the four meridian stones, placed in 1790 by Major Holland, then "Surveyor-General of Canada, 'stood in the angle of a field redoubt "where General Wolfe is said to have breathed his last.' As he had "been conveyed a short distance to the rear after being struck with the "fatal ball, it must be presumed that this redoubt had been captured, "and that the Grenadiers were pressing on when he received his mortal "wound. This is corroborated by a letter which we have met with, "written after the battle by an officer of the 28th regiment serving at "the time as a volunteer with the Louisbourg Grenadiers under Colonel "Murray. He speaks of the redoubt as 'a rising ground,' and shows

"that Wolfe was in possession of it previously to his last wound. Upon "the General viewing the position of the two armies, he took notice of "a small rising ground between our right and the enemy's left, which "concealed their motions from us in that quarter, upon which the "General did me the honour to detach me with a few Grenadiers to "take possession of that ground, and maintain it to the last extremity, "which I did until the two armies were engaged, and then the General "came to me, but that great, that ever memorable man, whose loss can "never be enough regretted, was scarce a moment with me till he re-"ceived his fatal wound."

Mr. Hawkins' account appears to be in accordance with the majority of the testimony, until he commences to picture the scene himself, then it becomes a case of Hawkins versus Hawkins. In the first place he describes the four-gun battery as being on the left of the British. Later, he claims that the ruins of the battery near the race stand which commanded the field, were probably the remains of the battery mentioned by Townshend in his despatch. If this were so, then the battery would have been on the right of the English and not on the left as asserted by Townshend, Knox, and other authorities. Moreover, on the plans, and on the drawing made at the time by the aide-de-camp of General Wolfe, this battery is placed on the left, the guns command the river and not the field, and between the battery and the field, some houses intervene.

In his attempt to be precise as to the relative positions of the army, Mr. Hawkins is unfortunate. The terminus *a quo*, without the terminus *ad quem*, is useless. The St. Lawrence is a large river, and a line might be drawn from either of the points given by Mr. Hawkins to Cape Diamond to Sillery, or to any other point on the river at will. We are, therefore, unable to gain much information from this source.

The next passage of importance in this quotation, is the direct statement that the severest fighting occurred between the right of the race stand and the Martello Towers. On page 357, Mr. Hawkins writes: "The English were ordered to reserve their fire until the French were "within forty yards. They observed these orders strictly." The French were therefore within forty yards of the right of the race stand. Mr. Hawkins makes it quite clear that the redoubt near which Wolfe is said to have died, was occupied by the English before the final engagement. As this redoubt is at least a quarter of a mile eastward of the right of the race stand, the French to gain this ground within 40 yards of the English, must have passed the Grenadiers who occupied the redoubt, and cut them off from the rest of the English army. "The General "did me the honour to detach me with a few Grenadiers to take that

"ground and maintain it to the last extremity, which I did until *the* "*two armies were engaged.*" Further passages relating to this redoubt become still more involved. Mr. Hawkins refers to this redoubt as the place "against which the attack was directed, which Wolfe so gallantly "urged on by his personal example." We have seen from the same author that the French were near the right of the race stand at the commencement of the attack, and that at the time the redoubt was occupied by the English, nevertheless, Mr. Hawkins states, that Wolfe gallantly led his men on to attack this redoubt. Wolfe was therefore, leading an attack against his own army. Mr. Hawkins seems to have had some doubt himself as to this position, for he adds "as he had been "conveyed a short distance to the rear after being struck with the fatal "ball, it *must be presumed* that this redoubt had been captured, and that "the Grenadiers were pressing on when he received his fatal wound. "This is corroborated by a letter." The letter, however, makes it clear that it was not captured after the engagement, but that the English occupied it before without any action. "He took notice of a small rising "ground between our right and the enemy's left, which concealed their "motions from us in that quarter, upon which the General did me the "honour to detach me with a few Grenadiers to take that ground and "maintain it to the last extremity, which I did, until the two armies "were engaged."

There is no mention of any action in connection with the taking of this ground. The General, before the battle, while reviewing the position of the armies, saw that it was an advantageous position, and sent a few men to occupy it. It has been shown by other testimony that Wolfe viewed the position of the armies from this rising ground before he formed his line, and it was after so doing that he disposed his troops in a circular form on its slope, and after this, again, according to Knox, that the armies moved a little nearer to each other.

It may be mentioned, that in 1841, seven years after the publication of his book, Mr. Hawkins published a plan of the battle inscribed to the Members of the United Service, and on this map, the four-gun battery does not appear. Two views of the army are given, one with the English line exactly at right angles with the gaol, and the other with the line exactly in the position placed by Jeffreys. These positions are probably correct. The first, no doubt, indicates the position of the English before the arrival of all the troops, as mentioned by Knox, and the second shows the final disposition of the troops made by Wolfe, immediately before the decisive action.

I think it is possible that Mr. Hawkins was not aware of the direction of the road leading from Wolfe's Cove, in 1759, at the time he wrote his book.

He speaks of this road as crossing the plains, and meeting the St. Louis Road at the entrance to the race course.

The road may have joined the St. Louis Road at this point some time after the battle, but in 1759 it wound round by the hill upon which the gaol now stands, and formed an angle with the St. Louis Road near de Salaberry Street. It is shown in this position on five different maps of the time, and the journal of Knox supports this position. "We are "drawing artillery and ammunition ashore....and have found a con-"venient road for the purpose, leading directly from the Cove to the "camp." The camp was situated, according to the same authority, at a distance of 1,000 yards from the garrison. Mr. Hawkins, believing that the road from the Cove joined the St. Louis Road at the entrance to the race course, and seeing that the line of the English army, on Jeffrey's plan, which he consulted, was placed at the point of union of the two roads, might have concluded, quite naturally, that the most severe part of the battle occurred here. We have shown, however, that the roads did not meet at the race stand in 1759.

On the map dedicated to the members of the army in 1841, Mr. Hawkins does not place this road from the Cove as meeting the St. Louis Road at the Race Stand, but at de Salaberry Street, in the same position as given on other maps.

Whether, therefore, in the interval between the publication of his book in 1834 and the issue of his plan in 1841, Mr. Hawkins had reason to alter his opinion, is not known, but the fact that his latest work agrees with the maps published by those who were present, is in itself significant.

Before considering the writings of other historians, we refer again to the rising ground or redoubt. Mr. Thompson thus speaks of it: "The General at first moved about everywhere, but after the beginning "of the action he took up his position on a rising ground near to where "our right flank was resting, from whence he had a view of the whole "field. The enemy's line of battle was completed soon after ours." There is no mention here of any attack being directed against this redoubt, led by Wolfe. It is also implied that this was before the decisive firing, as the right flank was resting near here.

Mr. Hawkins apparently did not receive his information concerning the redoubt from Mr. Thompson.

The venerable historian, Sir James LeMoine, whose books have done so much to popularize the history of Quebec, now claims our attention:

In 1876, Sir James published a valuable book entitled "Quebec Past and Present," in which he devoted a chapter to the battle of the

Plains. I do not, however, find anything contrary to the position established by the plans, except in that portion where the author quotes from "Picture of Quebec," by Mr. Hawkins. As the pages referring to the battle have been quoted in this paper, it is unnecessary to repeat them. In 1882, Sir James published a sequel to the former book, under the title of "Picturesque Quebec," and in this volume many valuable notes are given concerning the location of the armies. A very good plan is also published, and from measurements taken, I find that the armies are placed in almost the same position as on plan A.

On page 309, Sir James writes: "Montcalm, conspicuous in front "of the left wing of his line, and Wolfe at the head of the 28th regi-"ment, and the Louisbourg Grenadiers, towards the right of the British "line, must have been nearly opposite to each other at the commence-"ment of the battle, which was the most severe in that part of the field, "and by a singular coincidence each of these heroic leaders had been "twice wounded during the brief conflict before he received his fatal "wound." And on page 310, "In the September engagement, Mont-"calm's right wing rested on the St. Foye Road, his left on the St. Louis "Road, near the Buttes à Nepveu (Perrault's Hill)."

A foot note to one of the publications of the Quebec Literary and Historical Society, edited by Sir James, gives the distance of the British line from the walls of the city. The quotation is from a book by Col. Beatson, published in 1854. "He (Montcalm) was at that moment be-"tween Les Buttes à Neveu and St. Louis Gate. From the city on the "one side and the battle-field on the other, the ground rises until the "two slopes meet and form a ridge, the summit of which was formerly "occupied by a windmill belonging to a man named Neveu or Nepveu. "About midway between this ridge and St. Louis Gate, and to the "southward of St. Louis Road, are some slight eminences, still known "to the older French residents as Les Buttes à Nepveu or Neveu's hil-"locks, and about three-quarters of a mile distant from the spot where "the British line charged." Three-quarters of a mile from a point midway between the ridge and St. Louis Gate would place the line of the British at Maple Avenue.

With the exception of these two quotations, I do not find anything in the writings of Sir James LeMoine, which disagrees with the positions of plan A. It is perhaps well to state that at the time many of the books were written from which we have quoted, the site of the battle had not become a question of dispute.

I have not found any passage either in the writings of the Abbé Casgrain or of the Abbé Ferland which tends to weaken the testimony of the authorities quoted in this paper. In Garneau, there is a para-

graph which shows that the battle-field extended to the St. Foye Road, and that early in the day Wolfe had already entrenched himself in this direction. "Wolfe avait fait commencer le long du chemin Sainte "Foye, une ligne de petites redoubtes en terre, qui se prolongeait en "demi-cercle en arrière."

The movements of the British army after gaining the heights, as disclosed by the various sources mentioned in this paper, may be described in a few words. As soon as the troops had gained the summit, all was quiet, and a line was formed parallel with the river St. Lawrence, facing the north. The army then proceeded towards the St. Foye Road, along which it marched towards the town in files. Some houses were occupied near Maple Avenue, by the light infantry, and one of the houses was owned by Borgia. The army then wheeled to the right and formed the line of battle, the right of which extended to the edge of the cliff, near the river. Here the army rested for some time, and advanced posts were engaged in skirmishes with the Canadians, who were protected by a coppice. The houses on the left between the two armies were attacked, but the English maintained their position. A field piece was brought up by the British and placed in position. A new disposition of the army was made by Wolfe, and the reserve was stationed at the rear in about the centre of the line. The left of the line was strengthened by General Townshend on account of a movement on the part of the enemy to attack the flank in the rear, by way of Cote Ste. Geneviève. About this time a detachment of the Royal Americans was sent to the Marchmont property,[12] upon which the army first formed after gaining the heights, to preserve communication with the beach and with the boats. Before the general action had commenced, the troops had returned from the capture of the four-gun battery on the left of the landing, and took their position in the line. The enemy advanced until within about forty yards, and gave the first fire. The British returned the fire for about six or seven minutes, and then commenced to pursue the French towards the town, and down the cliff towards the River St. Charles. Some Canadians rallied near St. John's Gate, but after a few minutes firing they were dispersed.

Of the movements of the French army, General Malartic gives a very clear account. He shows that when the first alarm was given, two pickets were sent to Cote d'Abraham. Later, when Montcalm realized the position, he ordered a large number of troops to proceed to Wolfe's landing place, where he intended to follow. On the way these troops were met by the Major-General who informed them that Wolfe was already in battle opposite the city. He then directed them to proceed to the heights nearest the town. Montcalm arrived upon the

heights soon after, and decided to attack the enemy on the plain. After the line was formed at a short distance from the walls of the city, the army moved towards the ridge. A march was made towards the enemy in good order. When at about 100 paces from the ridge, the Canadians fired in an irregular manner, and then threw themselves flat upon the ground to reload. This unexpected movement disorganized the regular battalions, and most of the soldiers of the first line were killed. They met the British charge and then retreated.

The reserve of the British army does not appear to have taken any part in this engagement, unless they may have joined in the pursuit of the French. Mr. Parkman states that they took no part in the action.

Not a word is mentioned in the passages we have quoted that would lead one to suppose the French ever reached the ground known as the race course. On the contrary the whole evidence seems to indicate that until within a few moments before the decisive firing, the main body of the French army was upon the high ground, Claire Fontaine, and the only advance made from this position, was a distance of about 100 paces.

We have now to endeavour to ascertain, chiefly from the writings of those who were present, the time and the place of the death of Wolfe.[13]

By Townshend's account, the General fell at the head of Braggs, just as the enemy was giving way everywhere.

From Knox we learn that after Wolfe had been carried wounded to the rear of the front line, an officer exclaimed, "They run, see how "they run. Who runs? demanded our hero, with great earnestness, "like a person roused from sleep. The officer answered, the enemy, "sir, egad, they give way everywhere."

Fraser simply states that the General was "killed in the beginning "of the general action."

In the Gentleman's Magazine for December, 1759, this account of the death of Wolfe is given: "For our men so well levelled their pieces, "that there were few of the first and second ranks of the army (for they "were all regulars) that remained alive. In about seven minutes Las-"celle's and Highlanders rushed upon them with bayonets fixed and "sword in hand....He went reeling aside, but was soon supported by "an officer of whom he inquired if the enemy were put to flight, and "being assured that they were and that our troops were in pursuit, he "smiled and said that he died with pleasure."

In the Annual Register for 1759, another account is given. "But "just as the fortune of the field began to declare itself, General Wolfe, "in whose life everything seemed included, fell....As he lay struggling "with anguish and weakness of three grievous wounds....he desired

"an officer who was by him, to give him an account of what he saw. "The officer answered that the enemy seemed broken, he repeated his "question a few minutes after with much anxiety, when he was told "that the enemy was totally routed, and that they fled in all parts."

The Abbé Ferland gives this version: "Blessé au poignet au com-"mencement de l'action, Wolfe s'était contenté de l'envelopper, et con-"tinuait à commander les troupes, dans un des endroits les plus péril-"leux, lorsqu'il reçut dans la poitrine une balle qui le renversa, il mourut "peu après, ayant eu seulement le temps d'être informé que les Fran-"çais prenaient la fuite."

It will be observed that from all these sources the French gave way immediately after the firing of the decisive volley. The question to determine here, is the time at which they gave way everywhere.

Colonel Fraser says that it was by the time the smoke from the powder had vanished, after firing six minutes. Captain Knox states: "Hereupon they gave way and fled with precipitation, so that by the "time the cloud of smoke had vanished, our men were again loaded, "and profiting by the advantage we had over them, pursued them "almost to the gates of the town."

The Annual Register states that it was in seven minutes after the firing that the English commenced to pursue the enemy. During this interval, however, that is between the time of the firing, when Wolfe received his wound, and the time when the pursuit commenced, Wolfe was on the spot where he died. It was after he had been wounded; after he had been carried to the rear of the front line, and while lying upon the ground, that he was told that the enemy was giving way. It is, therefore, apparent that he must have fallen very near to the place where the firing occurred.

If the battle occurred on the Marchmont property, as some maintain, then the French must have receded in some unexplained manner a distance of over half a mile to a place east of Wolfe's monument, before giving way after the decisive volley, because it was from this spot that Wolfe was told that the enemy was beginning to give way. The accounts are very clear on this point. The enemy approached until within forty yards, and fired. The British returned their fire, and while they were reloading, before the smoke had cleared, the French were retreating, the British saw them in flight, and pursued them. Even if it were *possible* for the enemy to recede a distance of half a mile, whilst facing their opponents, it would have been *impossible* to have done so within the time indicated by the various authorities cited.

There is no difficulty to explain respecting the monument, if we accept the position established by the plan. The English received the

fire of the French at the place marked on the plan. Wolfe was at the head of Bragg's regiment, advancing the moment after the firing, but he fell instantly. "Our troops, says Townshend, reserved their fire till "within forty yards, which was so well continued that the enemy gave "way everywhere. It was then our General fell." The General apparently fell at a short distance in advance of the place where the decisive firing took place, and on the plan it will be seen that the monument is almost in a direct line in the rear of Bragg's regiment, from the front of which he was carried to the place where he died.

Reviewing the whole of the testimony, the principal points in favour of the position set forth, appear to be these :

1. The passages cited were probably recorded by their authors near the time of the battle, when the events were fresh to their minds.

2. The plan, upon which several of the calculations are based, has been proved by tests to be accurate in its general outlines, and to bear evidence of having been drawn by a competent officer. It bears the mark of being official by its inscription to the secretary of state, and the book with which it is published, is dedicated to Townshend.

3. The localization of houses on the left of the English line having been found to agree with the positions of houses indicated on the plan, and to accord with the evidence furnished by the journals of Fraser, Knox, Johnstone and Townshend.

4. The statement by Knox, that one of the houses, mentioned by name, was occupied by the English early in the morning, when they were practically in possession of the field, would seem to furnish proof that the French did not pass this point on the *left*.

5. The repeated statement by French and English authorities, that the British occupied an eminence on the right, the position of which is established, while the French were still on the ridge, affords grounds for the belief that the French did not pass this point on the *right*.

6. The distance between the houses occupied on the left, and the eminence on the right being about 1000 yards, renders it improbable that the French passed this line in the *centre*.

7. The statement by Knox, that the camp was situated at a distance of about 1000 yards from the garrison, and the evidence of Fraser, that the battle was fought on the ground where the camp was formed.

8. The repeated statements that immediately before the battle a detachment was sent to the ground on which the army formed after gaining the heights, to preserve communication with the landing place, which would apparently have been unnecessary if the English were drawn up in battle either on the race course or the Marchmont property,

as communication with the landing place would then have been insured by the presence of the whole of the army in its immediate vicinity.

9. The position of the English line near de Salaberry street, leaves the monument said to mark the spot where Wolfe died, at a reasonable distance in the rear of Bragg's regiment, at the head of which Wolfe is stated to have fallen.

10. The ground between de Salaberry street and Claire Fontaine appears to have been the most advantageous available, since it afforded houses on the left to shelter the troops, and an eminence on the right commanding a large portion of the ground chosen by the French.

Considering that all the points above referred to are supported in so many different ways by various sources, and that the written testimony agrees with the position of the ground which could not vary, the only conclusion I am able to form is, that the battle occurred between the lines indicated on plan A—between Claire Fontaine street and de Salaberry street. The principal action seems to have taken place on the right and left of the Grande Allée, and a great many were killed quite near St. John's Gate and on the embankment of Cote Ste. Geneviève, while several were killed near St. Louis Gate.

In connection with the site of the battle it may prove of interest to state that a part of the engagement was upon the ground actually owned by Abraham Martin, after whom the plains were named, and for this purpose copies of the earliest deeds relating to this property are published in the appendix to this paper.

Particulars relating to the property known as the race course are also given, from which it will be seen that the land was never owned by Abraham Martin, although his name was given to most of the property in the neighbourhood.

The two photographs specially taken for this paper show the ground upon which a portion of the English and French lines were drawn up, and it will be observed that a fair portion of land still remains vacant.

During the course of my investigations, I found that two important documents relating to the siege of Quebec were in Europe, and I have not yet received copies. I hope therefore, at some future date to prepare a supplementary paper. The whole of my study up to the present is placed at the disposal of those who are interested in the question, and I trust that at least some portion of it may be of assistance to students who desire to form an impartial judgment of the whole question, or to those who may wish to investigate the subject for themselves.

The list of authorities consulted and the plans examined in the preparation of this paper, are published for the purpose of facilitating further study.

To some it may be a cause of regret that the whole of the battlefield was not preserved. The names of the two heroes, Wolfe and Montcalm, are, however, imperishably enshrined in the pages of history, and their deeds have become their monument. Much of the ground once dyed by the blood of one-time friend and foe, is undoubtedly obscured from view, and will for ever remain unmarked, still in the words of the poet, George Murray,

"All earth becomes the monument of men who nobly die."

NOTE.

Towards the close of my paper I mentioned that two important documents relating to the battle were in Europe, and that at the time of writing I had not received copies.

Since this paper has been in the press I have received the two plans referred to, and they confirm in every respect the accuracy of the positions established on Plan A.

The first is a copy of an exceedingly fine manuscript plan in colours, five feet by two feet, which was at one time in the possession of the Royal Engineers. This plan is the work of the Engineer-in-Ordinary and two Assistant Engineers of Wolfe's army. Minute details are given of every movement made by the army, and even the colours of the facings of the different corps are indicated. All the earth-works and redoubts, whether French or British, are distinguished, and, with the copious notes on the plan, it forms a complete history of the battle.

The late Mr. Faribault, in his valuable catalogue of works relating to North America, published in 1837, writes concerning this plan: "No description of Wolfe's "campaign at Quebec could give so accurate an idea as is derived from this plan "and without it the best description would be very imperfect."

The plan is a complete refutation of the passages in Mr. Hawkins' book relating to the redoubt against which Wolfe led the attack, for it is stated on the plan that the redoubt was not erected until after the battle.

The battery on the right of the Race course, referred to by Mr. Hawkins, was also constructed after the battle.

According to this plan, the army was not at any time drawn up upon the ground forming the present Race course.

The other plan refers more particularly to the battle of 1760, and I hope at a future date to prepare a paper on this event.

APPENDIX.

LA CARRIERE DU GENIE.

Now Called the Race Course.

This property is bounded on the north by the Grande Allée, on the south by the River St. Lawrence, on the east by a line near the toll gate, and on the west by the Marchmont property.

For some reason, probably on account of the passages in "Picture of Quebec," referred to in the foregoing paper, and which have been repeated by other authors, this ground has been considered as the site of the battle of September 13th, 1759.

Indignation was expressed, both at home and abroad, when it was known that this land was about to be divided into building lots, although no attention seems to have been directed to the land on the opposite side of the road, or to the fact that houses are at present being built thereon. If a battle had occurred in this part of the town, it seems clear that it must have extended to the other side of the road, the scene also of the battle during the following year. No explanation, so far as I have seen, has been offered as to why this part of the ground should be considered more sacred than any other portion of the field, even presuming for the moment that an engagement was proved to have taken place here. No one claims it as the scene of the death of Wolfe, or of Montcalm, and the place of the death of the former is already marked. The place where Wolfe was wounded, and where he fell, is clearly shown even by Mr. Hawkins, to have been eastward of the monument, and this ground is already covered by the buildings of the gaol. It has been proved by eye-witnesses that many brave Canadians were killed on the borders of Cote Ste. Geneviève. Why should not this ground be preserved ? It has also been shown by eye-witnesses that many were killed under the walls of the city. Why should not this place be marked ? There is not one writer of the period who states that any loss occurred on the race course ground, and yet there is a desire to preserve it as the battle ground. I do not think that any one, after studying the ground, and the nature of its surroundings, would believe for a moment that a general, when practically in possession of the whole of the high ground,

would have confined his army within the small area of the race course. By doing so he would have been entirely at the mercy of his foes, for the declivity on Cote Ste. Geneviève, would have permitted any number of troops to ascend, unperceived, and attack him in the rear. Even the despatch of Townshend, which does not give many minute details, mentions that extra precautions were taken on this side, and that the army was subsequently strengthened, to prevent any attack in this direction. If this spot is not the site of the decisive contest, and not the place of the death of either of the leaders, it is difficult to understand why it is any more sacred than other portions of the ground between Marchmont and the city. In 1824, the property simply divided by a fence from the race course, was offered for sale, and so far as I have been able to ascertain, no objection was raised, although the third brigade of the Royal Americans was stationed on the Marchmont property.

The advertisement speaks of it being situated "Upon the Plains of Abraham."...."To persons inclined to purchase this estate upon speculation, it offers obvious advantages, as several valuable portions of "it might be laid off in small lots of from one to three acres."

Strong feeling, however, was exhibited by some of the inhabitants when the ground upon which the battle was actually fought, was about to be parcelled off in 1790. One indignant writer when referring to the farming out of "All Abraham's plains for a term of 40 years, at ten "shillings per annum for every superficial acre, in different parcels to "be picketed or fenced in by the lessees," is scarcely able to restrain his wrath, because it was "on this spot that the bleeding patriot who "sacrificed his life for his country, expired." The writer adds, "nor "have the nuns of the General Hospital or the Hotel Dieu, the pro-"prietors, ever been abridged in the enjoyment of the emoluments "accruing from the heads of cattle fed there." The quotations which we have given seem to indicate that neither in 1790 or in 1824, the ground of the race course, or the Marchmont property, from which it is divided by a fence, was regarded as the field of battle. The nuns of the General Hospital, or of the Hotel Dieu, were never the owners of the race course property, as may be seen by the particulars hereafter given.

It would appear quite probable that the first author to place the field in this direction, was Mr. Hawkins, who admits that he based his positions on Jeffrey's plan. His statements have been repeated over and over again until the spot is pointed out to-day as the scene of the conflict. The ground has gradually been built upon westward, and as this is the only large piece of vacant ground near the monument, it is

quite natural that it should be pointed out to tourists as the battle field.

The total area of the race course property is about 87 arpents, and the title deeds show that it was divided into five concessions. The earliest paper referring to the ground, is a deed of concession to Denis Duquet, of thirty arpents of land, on the 15th of Sept., 1645, and ratified by the company of New France, on the 29th March, 1649. A copy of this deed is published herewith. The land was situated towards the west of the present inclosure, and was sold to the Ursulines on the 12th of March, 1671.

The second concession consisted of 25 arpents to Antoine Brassard on the 14th of February, 1647, and was bought by the Ursulines from the heirs Brassard, on the 28th of April, 1675. The third concession of land was made to Pierre Normand and Gervais Normand on the 14th of November, 1647, and acquired by the Ursulines on the 20th November, 1678. The fourth concession was made to Guillaume Gauthier on the 8th of May, 1651, and purchased by the Ursulines in 1690. The property was afterwards increased to the extent of one arpent on the eastern boundary, which was acquired from the Hotel Dieu. A piece of land in another part of the city being the price of the exchange.

Concession de trente arpens de terre situé près Québec, à Denis Duquet, le 15 septembre 1645, ratifiée par la Compagnie de la Nouvelle France le 29 mars 1649.

La Compagnie de la Nouvelle France. A Tous et à venir Salut.

Veu Lacte de département & distribution faicte par Monsieur de Montmagny, Gouverneur et Lieutenant général pour le Roy à Kebecq et dans lestendue du fleuve St-Laurens en la Nouvelle France, suivant le pouvoir à luy donné par nostre Compagnie, et soubs le bon plaisir d'Icelle, de Trente arpans de Terres scitués en la Nouvelle France le long du fleuve Saint Laurens, proche Kébecq, au proffit de Denis Duquet, Habitant de la Nouvelle France. A la charge d'en prendre par luy Concession de nostre d. Compagnie, led. acte en datte du quinzième jour de Septembre mil six cent quarante cinq, cy attaché par contressel, Nous avons donné concédé et octroyé et en vertu du pouvoir accordé à nostre Compagnie par Le Roy Nostre Souverain Siegneur, donnons, concédons et octroyons and. Denis Duquet Lesd. Trente arpans de terres ou environ ainsy qu'ils sont désignés par led. acte, Pour en jouir par led. Duquet, ses successeurs ou ayans cause à Touisiours aux Conditions portées par Icelluy, et outre à la Charge du Cens qui sera de six deniers

pour arpant par chacun an. Led. Cens portant lots et ventes saisinne et amande et ce au cas et ainsy qu'il y échet en la Coutume de la prevosté et Vicomté de Paris. Mandons au Sieur Daillebout, Gouverneur et Lieutenant général pour le Roy dans l'estendue du fleuve St-Laurens, Qu'il mette en bonne et deube possession led. Duquet desd. Trente arpans de terres cy dessus, luy assignant les bornes, et que de la prise de possession il fasse Procès Verbal pour estre envoyé en France au premier retour des vaisseaux Le Tout à la charge que lesd. terres n'ayent point encor esté concédées. Ce fut fait, donné, concédé et octroyé en Lassemblée des Intendant et Directeurs de la Compagnie de la Nouvelle France, en leur Bureau à Paris, L'an de grâce mil six cent quarante neuf, le vingt-neuviesme jour de mars. En foy de quoy nous avons fait expédier les présentes sur la minutte signée de nous demeurée en nostre Bureau, et à Icelles fait apposer le sceau de nostre Compagnie.

Par la Compagnie de la Nouvelle France.

(signé) LAMY, (avec paraphe)

(L. S.)

4e décembre 1635, Procès verbal de bornage et arpentage de douze arpens de terre à Abraham Martin, par Jean Bourdon, arpenteur.

Je soubs signé, François Derré Sieur de Gan,[14] Commis Général et l'un des officiés de la Compagnie de la Nouvelle France que en vertu du pouvoir à moy donné par Mr de Champlain, Lieutenant général pour Le Roy, et de Monseigneur Le Cardinal Duc de Richelieu à Québec et en toute l'estendue du fleuve St-Laurens en lad. Nouvelle France, et terres circonvoisines comme aussy faisant pour Messieur les associés au peuplement et défrichement des terres de lad. Nouvelle France et tout ce qu'il jugera estre nécessaire suivant dle pouvoir et commission de Messieurs Les Intendant et Directeurs de lad. Compagnie et dautant que led. Sieur de Champlain seroit atteint d'une griesve maladie pour ne pouvoir agir en vertu dud. pouvoir, Jay pris avec moy Mr Olivier Le Tardif[15] Commis general au Magazin pour Messieurs de La Compagnie particullière et le Sieur Bourdon Ingénieur et Arpenteur, me serois transporté ce quatriesme jour de décembre Mil Six Centz Trente Cinq[16] aux terres données à Abraham Martin[17] au nombre de douze arpens Lesquels Jay faict mesurer, arpenter et borner par led. Sieur Bourdon pour y mettre led. Martin en pleine possession pour en jouir luy et ses hoirs et ayans cause à l'advenir, à la charge qu'il prendra ratification du don desd.—Messieurs les Intendant et Directeurs, Lesquels se sont Réservé de donner les titres honneurs et Redevances et d'autant qu'il est néces-

saire davoir Une Mesure dans led. pays pour arpenter, en a jugé à propos de prendre celle de Paris qui font dix-huit pieds pour perche et cent perches pour arpent à ce qu'à l'advenir toutes Choses soient Réglées esgallement, les bornes des terres dud. Martin sont d'un costé le long d'un Costeau proche du chemin des Recollets, d'autre costé les terres non désertes, d'un bout Guillaume Hubou[18] et d'autre bout lesd. terres non désertes tirant vers Recolletz, les lignes courantes à Lest quart de nordest de ouest quart de sorrouest, et d'autre ligne au sud quart de sudest et nord quart de norrouest jusques à la fourniture desd. douze arpens.

Faict les an et jour que dessus.

(signé) DERRE, (avec paraphe)
LETARDIF, (avec paraphe)
JEHAN BOURDON,[19] De la ville (avec paraphe) Greffier Commis à la Juridiction de Québecq.

16 May 1650 : Ratification d'une concession faite à Abraham Martin par feu Mr Gand (François Derré, sieur de Gand) en 1635—Douze arpens de terre—Cheffault.

La Compagnie de la Nouvelle France à Tous ceux qui ces présentes Lettres verront, Salut.

Désirant de tout son pouvoir obliger les habitans à travailler au défrichement des terres du Pays, et à se bastir, elle auroit cy devant donné pouvoir au feu Sieur de Champlain, Lieutenant général pour le Roy, dans toute l'estendue du Fleuve de St-Laurens, de distribuer des Terres aux Habitans, à la charge de faire ratifier les Concessions qu'il en auroit faites, Lequel sieur de Champlain estant detenu de maladie au licit; affin que la dite distribution des terres ne demeurast, auroit donné pouvoir au Sr François Derré, Commis général de la Compagnie de distribuer à Abraham Martin, Habitant demeurant au dit Pays, douze arpens de Terre situez dans la banlieuë de Québecq; Lequel Sr Derré auroit iceluy Abraham Martin mis en pleine possession desd. Douze Arpens de terre, auxquelles il a fait planter des Bornes, après la mesure d'iceux faite par Jean Bourdon, Me Arpenteur, le quatriesme décembre Mil six Cens Trente Cinq. Lequel Abraham Martin requéreroit humblement la Compagnie de vouloir ratiffier la dite Concession, et la charger de telle redevance qu'elle adviseroit. A Ces Causes. Inclinans à la Requeste dudit Martin, nostre ditte Compagnie a ratifié et agréé lad.

Concession faite audit Martin, A la charge de Douze deniers de Cens pour chacun arpent par an, qui seront payez entre les mains des Officiers qui seront commis par la Compagnie, Ledit Cens portant Lots, Ventes, Saisines, et Amandes quand le cas eschet, selon la Coustume de Paris. En foy de quoy Nous avons fait signer les présentes par le Secrétaire de nostre Compagnie le Seiziesme May Mil Six Cens Cinquante, en l'Assemblée de ladite Compagnie.

Par la Compagnie de la Nouvelle France.

(signé) A. CHEFFAULT (avec paraphe)

5 avril 1639.—Concession par la Compagnie de la Nouvelle France à Adrien Duchesne. Ratification de la concession faite par C. H. de Montmagny le 9 juillet 1636.

La Compagnie de la Nouvelle France à Tous ceux qui les présentes verront, salut: Sçavoir faisons que veu l'acte de distribution et département des terres en la Nouvelle France dont la teneur en suict, Nous, Charles Huault de Montmagny, Lieutenant pour Sa Majesté en toute l'estendue du fleuve St-Laurens, en la Nouvelle France, en vertu du pouvoir à Nous donné par Messieurs de la Compagnie de la Nouvelle France, avons distribué et départy, soubs le bon plaisir de Messieurs de lad. Compagnie au Sieur Adrien DuChesne, la Consistance de vingt arpens de bois, ou environ, mesure de Paris, en Rotture, scituez dans la banlieuë de Québec et compris dans les bornes et limittes qui en suivent, scavoir: du costé du sudest quart au sud Abraham Martin, du costé du nordouest le cotteau de Ste. Geneviéve, du costé du sud ouest quart au ouest Mr Darpentigny, et du costé du nordouest quart à l'est le Sr Hubou, ainsy qu'il est descript et exprimé en la Charte qui est demeurée au Greffe signé de Nous, pour jouir, luy, ses Héritiers et ayans cause, plainement et paisiblement, en pure rotture, aux charges et censives que Messieurs de la Compagnie de la Nouvelle France ordonneront, et ce à la charge que led. Sieur Adrien Duchesne fera travailler au défrichement des dicts bois et soufrira que les chemins qui se pourront establir par les officiers de Messieurs de lad. Compagnie passent par ses terres sy ainsy les dicts officiers le jugent expédiant. Et prendront Concession de Messieurs de lad. Compagnie, des dicts bois à luy par nous distribuez le Neufiesme Jour de Juillet mil six cent trente sept, signé C. H. de Montmagny. La Compagnie a confirmé et confirme lad. distribution de terres, et, en tant que besoing est, en a de nouveau fait don et concession aud Sr Adrien du Chesne. Pour en jouir, par luy, ses successeurs ou ayans cause, aux dictes charges et conditions ci dessus exprimées et outre

moyennant. Un Denier de Cens pour chaque arpent de terres par chacun an, dont pourtant ils ne paieront aucune chose durant les dix premières années à compter du jour de lad. distribution. En Tesmoing de Quoy les directeurs de lad. Compagnie on fait expédier les présentes qui furent faictes et concédés en l'assemblée tenue en l'hostel de Monsieur Foucquet, Conseiller du Roy en ses Conseils d'Estat et privé: A Paris, le Cinquiesme Avril mil six cens trente neuf, et à Icelles fait apposer le sceau de la dicte Compagnie.

Par la Compagnie de la Nouvelle France.

(signé) LAMY (avec paraphe)

NOTES.

[1] "Moreover, I was assured by your deserters you had no troops on the Heights "of Abraham."—Johnstone, page 33.

[2] The River St. Charles is not visible from the Marchmont property. General Wolfe was probably upon the St. Foye road at the time.

[3] Since this paper was submitted to the Honorary Secretary of the Royal Society, I have received several plans from Europe which show that the battery referred to by Mr. Hawkins was erected after the 13th of September.

[4] Mr. Noble, in his "Journal of the Siege," says that this battery was captured without the loss of a man, and that the powder was destroyed.

[5] It is shown on the large manuscript plans which I have received since this paper has been in the press, that the condition of the ground now forming the racecourse would have prevented operations there on the day of the battle.

[6] This is a very good estimate of the distance, and it is important in view of the other estimates made by Fraser.

[7] On a manuscript plan obtained from England this small eminence is shown to be in this position.

[8] "This bakehouse appears to have been somewhere at the foot of Abraham's "Hill."—Sir James LeMoine, "Picturesque Quebec," p. 433.

[9] It would have been impossible for any action on the south side of the Grande Allée to have been seen from the walls of the city, if it had occurred west of de Salaberry street, on account of the height of the hill, and also on account of the distance (nearly one mile).

[10] At the time of the battle the racecourse was not a clear piece of ground as it is to-day.

[11] A part of the ground was inclosed.

[12] According to the three manuscript plans I have lately received, the 3rd battalion of Royal Americans was placed near the site of the Marchmont buildings.

[13] For many interesting particulars relating to the death of Wolfe, the reader's attention is directed to an excellent article in "Canadiana," vol. i, by Mr. George Murray, F.R.S.C.

[14] François Derré, Sieur de Gand, was buried beside Champlain as a mark of honour.

[15] Le Tardiff was one of the first inhabitants of Côte Beaupré.

[16] Twenty-one days before the death of Champlain, which occurred on Christmas day the same year (1635).

[17] Abraham Martin, styled l'Ecossais, was of Scotch descent. He was a king's pilot. He left only one son, who became a priest. His daughters are the ancestresses of most of the French Canadian families.

[18] Guillaume Hubou was one of the first settlers. His house occupied the present site of Mr. Darlington's establishment, corner of Buade and Du Fort streets. The said Hubou was collector of revenues of the parish church of Quebec.

[19] Jean Bourdon's name is perpetuated in that of St. John street.

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Copy of large Ms. Plan made by three officers of Wolfe's army.
Engraving of the Scene of Battle made from a drawing by the aide-de-camp of General Wolfe.

Many of the scarce works and plans consulted during my investigations were kindly placed at my disposal by Mr. Phileas Gagnon, of Quebec, to whom also I am indebted for many valuable suggestions which facilitated my labours.

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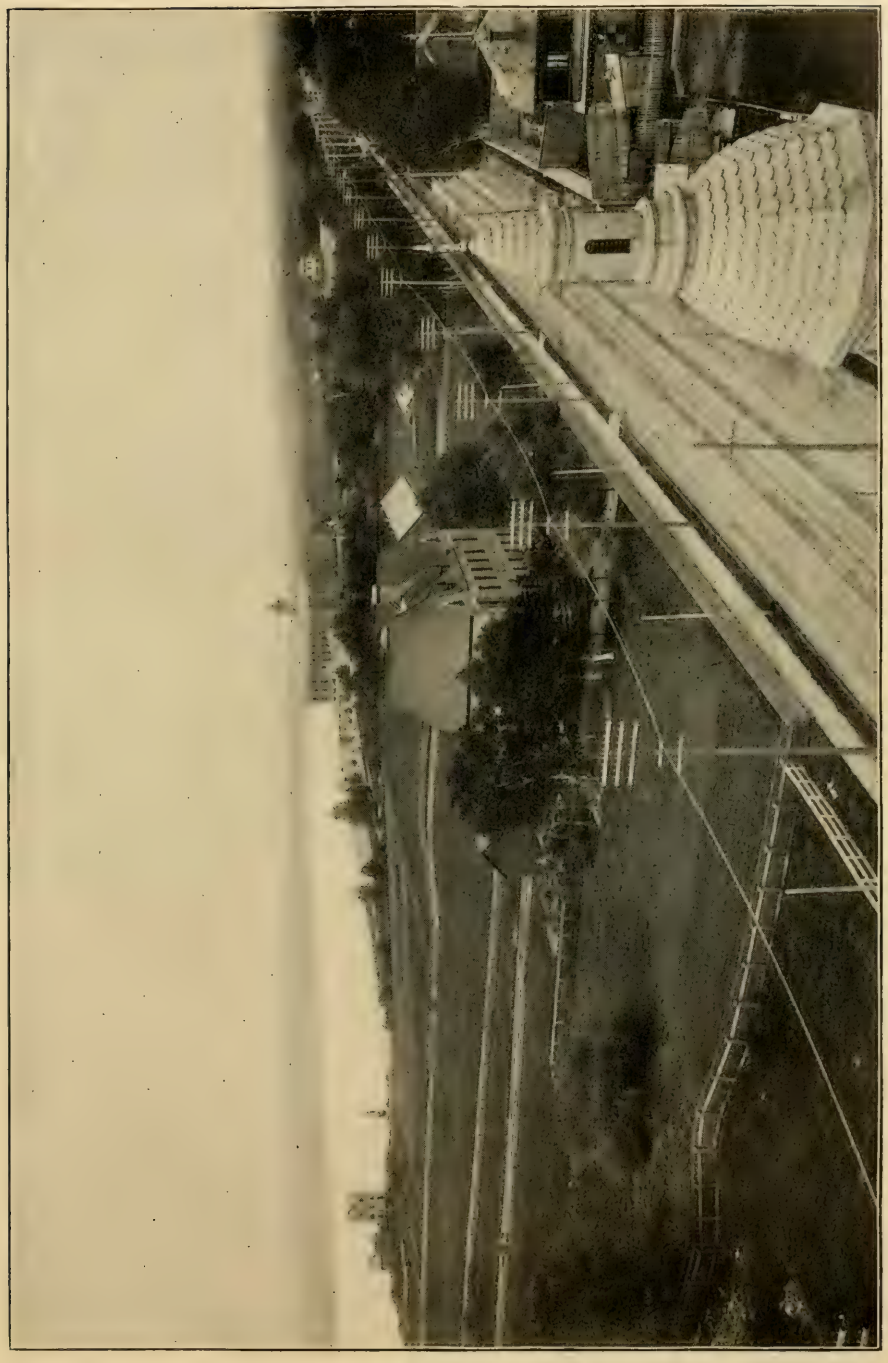
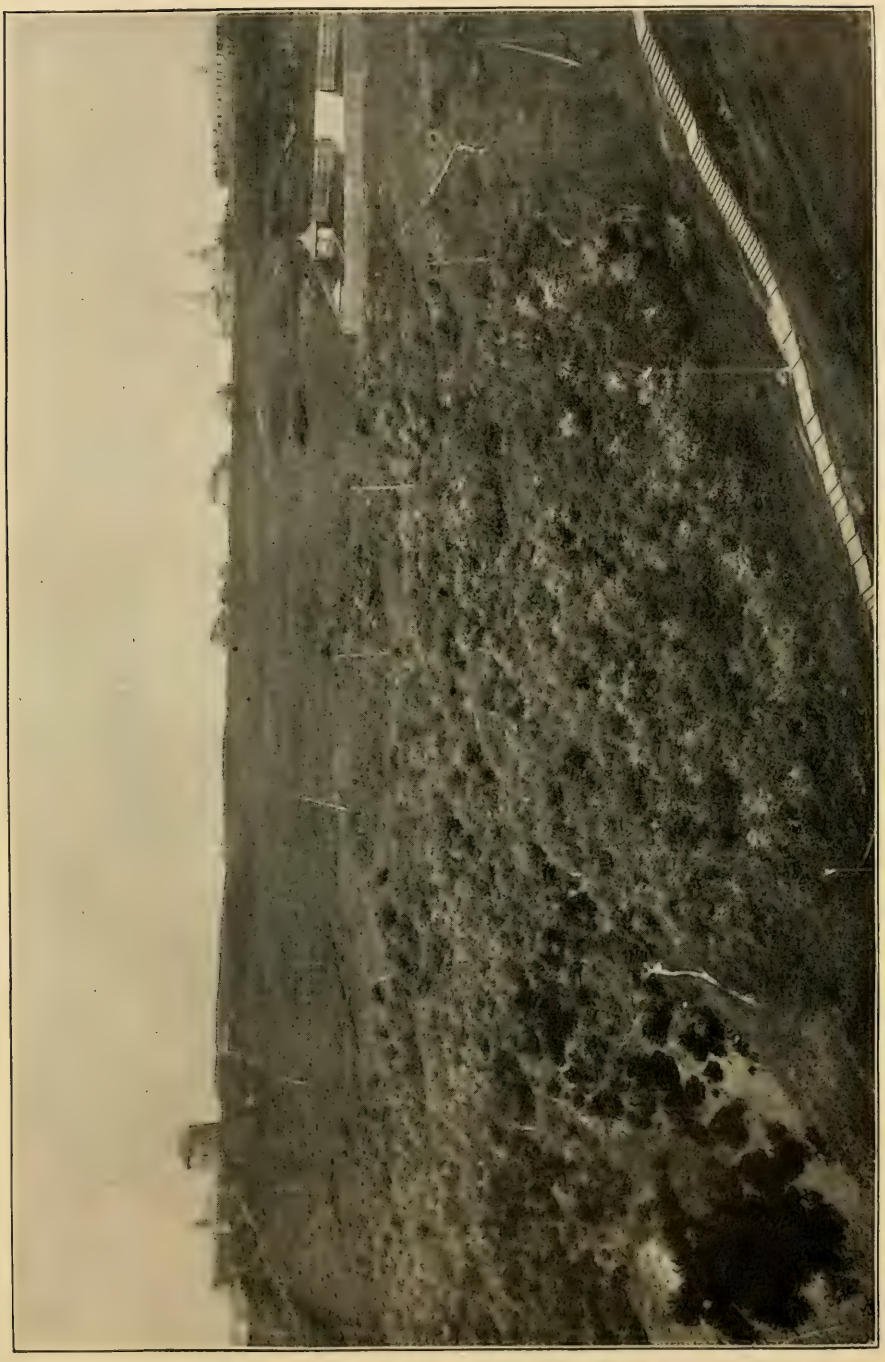


PART OF THE GROUND UPON WHICH THE BRITISH ARMY WAS DRAWN UP.



PART OF THE GROUND UPON WHICH THE FRENCH ARMY WAS DRAWN UP.

V.—*Cabot's Landfall and Chart: Some Criticisms Answered.*

By MOST REV. ARCHBISHOP O'BRIEN.

(Read 26th May, 1899.)

In the Presidential Address which I had the honour of delivering at the session of the Royal Society on June 24th, 1897, and which is inserted in the Transactions of that year, I advanced a new argument for locating the landfall, and broached a new theory regarding Cabot's Chart. In both cases I submitted proofs based on historic evidence as well as on recognized canons of interpretation.

Whilst some have found the proofs satisfactory, others have questioned their strength, and have refused to accept them as conclusive. This is not a cause for surprise or wonder. Minds are variously constituted: dearly hugged theories die hard; and certain, often unconscious, prejudices are difficult to shake off. When the calendar was reformed by Gregory XIII, some nations could see in it only a cruel device to cheat them out of ten days of life. There were men, too, who saw its reasonableness, but preferred astronomic darkness to light from such a source. Small wonder that a geographical conclusion of mine, at variance with received ideas, should be looked at askance. In the end, however, it will prevail.

The objections by Dr. S. E. Dawson in his paper printed in the same volume of the Transactions as the address, are the only ones I shall now consider. They are the strongest that have fallen under my notice; to rebut them will therefore suffice. These objections, chiefly found in Appendices E and F, may be reduced to three heads, viz:—

1. That the argument from a passage in Da Soncino's letter is valueless.

2. That the Gulf of St. Lawrence was unknown before Cartier's first voyage.

3. That Cavo de Inglaterra on La Cosa's map is not Cape Chidley but Cape Race.

As briefly as possible each objection shall be answered, for notwithstanding Dr. Dawson's contention, I still maintain the question is to be decided by evidence, not by "conjectural lines" of variation of the compass, nor by loading the pages of the Transactions with maps and diagrams which have their use and value in many ways, but which, in deciding the site of the landfall, have only an "academic interest, and are not germane to the question." Evidence is to be sought in

authentic records: and as truth is always clear to those who seek it in an unbiassed frame of mind, long dissertations are not only unnecessary, they are wearisome.

The Address showed we had two undoubted facts regarding the Cabot voyage of 1497, viz:—The course was west from England, and the Islands found were distant seven hundred leagues. Confined to these two facts the landfall might be on some part of the Labrador, or on the northeastern Coast of Newfoundland, or on some part of Cape Breton. Each locality had its champions: but as a third known quantity was required to convince a reader of a logical turn of mind, theories more or less ingenious, and, we shall say, more or less probable, were elaborated into facts, and each champion had his case proved —to his own satisfaction at least. Now the Address affirmed that Da Soncino's letter, the reliability of which is beyond question, supplied the third known quantity in a passage the value of which had been strangely overlooked. We have been gently reprimanded by Dr. Dawson for this assertion, yet, perforce we must repeat it.

When, however, we reflect that Mr. Harrisse asserts that Tanais was a "well defined coast bordering the Eastern Seaboard of Asia," and Dr. Dawson took it as a vague expression for some eastern lands, we must cease to marvel that others should pass it by unheeded.

The Address stated that Da Soncino gave us a clue to the latitude of the landfall by saying, "et andando verso el levante ha passato assai el passe del Tanais." ("And going towards the east he passed considerably beyond the Country of Tanais.") Dr. Dawson truly says that the translation of the passage "seems easy enough." Yet, strange to say, we have seen translations that are inaccurate and misleading. That of Mr. Harrisse is only slightly faulty: "considerably beyond," not "far beyond," is the correct rendering of "Passato assai" when written. In conversation, by tone and accent, *assai* could be made to signify far.

In the Address it was maintained that this passage indicated approximately the latitude of the landfall. Cabot sailed from Bristol and he "passed considerably beyond the country of Tanais" before sighting land. As Bristol is north of Tanais the landfall should be considerably south of it. Thus Labrador and the Newfoundland Coast would be excluded, being too far north. The only land, 700 leagues west of Bristol and considerably south of Tanais is Cape Breton Island, on some part of which the landfall must be located.

Dr. Dawson still maintains that Tanais was an "indefinite region" not in "Europe but in Asia," and "not likely to be taken as a standard of location for newly discovered regions." Moreover, he asserts that

Cabot must have considered Tanais north of Bristol, as it is so given on Ptolemy's map. Hence, he concludes, the argument would tell against myself.

Dr. Dawson fears I underrate the general extent of knowledge of mediæval cartography. Well, if the authorities he cites in Appendix E, and which he more than endorses, are specimen witnesses, his fears are groundless. We had thought the day was passed, and with it the strange hallucination that warped men's vision, when a writer could suggest that the human mind had been stagnant for long centuries. A noted English writer has tersely rebuked this mental attitude by saying:—"Those who speak of the ignorance of the Middle Ages only show their own ignorance of its achievements." I shall only add to this that it is incomprehensible how men can think that the Ages which studded Europe with the finest specimens of architecture, filled them with the noblest works of sculpture and paintings, adorned them with exquisite taste and skill, both in mosaic and wood-carving, which produced the greatest poets, witness Dante, Petrarch, Tasso—the most profound philosophers and theologians, such as Albertus Magnus, Thomas Aquinas and a score of other schoolmen, learned writers and historians, navigators like Columbus, the Cabots, Amerigo Vespucci,—were characterized by mental stagnation. Dr. Dawson waxes mirthful over a certain Cosmas Indicopleustis. I fear he will be obliged to hold his sides (since he finds a case of not very inexcusable ignorance so amusing) when he reads that an enlightened Englishman wrote, and a first class English Quarterly published, a very few years before the introduction of railways, that the idea of travelling on an iron road, by steam, at the rate of ten miles an hour, was as absurd as the proposition to go from the arsenal to Woolwich on a Congreve rocket.

On account of the neglect of, or contempt for mediæval literature, human progress has lost at least a century. The solid foundations, and many feet of shapely walls, of the temple of human knowledge had been built by the Ancients and their successors of the Middle Ages. Instead of continuing the work, men of these latter centuries started to build anew. The many superficial, fanciful and shifting theories of our day prove that the foundations of the new temple have been laid on sand.

That vague ideas of the whereabouts of Tanais existed, and still exist, may be granted. But I shall prove that before, during and after Cabot's time, the Venetians, Genoese, Milanese and Italians in general, knew Tanais as a definitely located State or Country in Europe. Certainly as a distinct tribe the Tanaitæ of Ptolemy did not exist, but the country remained and was known as Tana, though not always men-

tioned by that name. As in many instances, ancient and modern, the city stood for the whole country. Tanais was a self-governing community in the fifteenth century and owned a portion of what was often called the "Plains of Tartary." The Tartars roamed over all the territory between the Dnieper and Volga (formerly Edil), but they respected for a long time the State of Tanais. Just as the name Acadia has clung to Nova Scotia and is known in our day, so the name of Tanais or Tana, clung to a definite portion of the great plains of Tartary, until late in the sixteenth century. When the city of Tanais became known as Azov, and the river's name was changed to Don, the location of the country was gradually forgotten. But this was after Cabot's day. The following reproduction from Ptolemy's eighth plate of Europe shows the location of the Tanaitæ and of the ancient city of Tanais : (Fig. 1).

In the library of St. Mark, Venice, there is preserved the only known copy of a Book of Voyages printed at Venice in 1545 ; one of these is a voyage to Tanais, or as it is called, Tana. Through the courteous aid of His Worship the Sindaco (Lord Mayor) of Venice, I have been enabled to procure a literal transcription of the title page, index of contents and publisher's preface of the volume, as well as the whole of the Voyage to Tanais. This and some of the other voyages had been previously printed. The publisher is Antonio Manuzio. The author of the voyage to Tanais is the "Magnificent Master Josaphat Barbaro, Ambassador of the Illustrious Republic of Venice to Tanais." The very title of the author, read in the original, should be sufficient to prove my contention.—*Viaggio del Magnifico messer Josaphat Barbaro, Ambasciatore della Illustrissima Republica di Venetia alla Tana.*

Tanais must have been a State or Country, not only because an Ambassador is accredited to it, but also because we read *Alla Tana* not *a Tana*: just as it is *a Parigi, a Londra,* not *alla Parigi,* etc., on the other hand when a state is meant we say, *Alla Francia, alla Spagna.* This form of speech *Alla Tana* and *della Tana* is preserved throughout the narrative. After a short preamble in which the author tells us he did not wish to write, but had been induced to do so "by the solicitations of one who had the right to command," he says :—

"In 1436 I first undertook the voyage to Tanais where, now in one part now in another, I passed sixteen years, and I have gone around those parts both by sea and land carefully and with interest." (*Del MCCCCXXXVI cominciai ad andare al viaggio della Tana : ove a parte a parte son stato per la somma di anni sedici & ho circondato quelle parti, si per mare, come per terra con diligentia, & quasi curiosità.*)

(Op. p. 430.)

FIG. 1.—FROM PTOLEMY.

We see here again that it was not merely to a city he was accredited as Ambassador, but to a country or State, the various parts of which he visited. Whilst it is quite true that the vast tract of fertile land between the Volga on the east and the Dnieper on the west, and running north to Russia was practically in the hands of the Tartars, who roamed over it at pleasure, yet a portion of it was still known as Tanais. This is apparent from the words of our author, not only in the passage just quoted, but in several others. Speaking of a horde of Tartars who passed near the city, he twice uses the expression, "fiume della Tana," which cannot be translated "the river Tanais," but "the river of the Country of Tanais." He says also this horde came "before the plain, or country of Tanais," (*avanti il Campo della Tana,"*) and "it went or passed before this plain in eight different groups." Again when the chief of the horde had encamped near the city, our author was asked by the authorities to be the bearer of presents to him. We are told it was customary to give a novena of presents, or nine different articles. These were duly taken forth and presented to the chief by our author who "recommended to him the country together with the people," (*li raccomandai la terra insieme col popolo"*). The land of Tanais was still, in the estimation of its people, a distinct portion of the plains of Tartary.

The city was walled and had a beautiful tower over its gateway. Its civil head was styled, as in Rome of old, Consul. It was as it had long been, and as it continued to be for more than one hundred years, a busy mart, where buyers and sellers from Italy, the Grecian Islands, Russia, Persia and even Egypt met and exchanged commodities. The search for buried treasure is not peculiar to moderns. Our author tried his hand at it. A summary of his narrative on this point will reveal to us how thoroughly well known Tanais was to the Venetians and many others. He tells us there were many sepulchral mounds around Tanais. In the time that Messer Pietro Lando (evidently an Italian) was Consul, a man named Gulbedin came from Cairo where he had heard from a Tartar woman that a great treasure was buried in one of these mounds, the whereabouts of which she made known to him. For two years he dug, then died before he had reached the treasure. On the night of the feast of St. Catherine (25th Nov.) 1437, seven merchants, Francisco Corharo, Catharin Contarini, Giovan Barbarigo, Giovan da Valle, Moise Bon, Bartolomeo Rosso and our author, (several of whom were Venetians and all Italians), were together in the house of Bartolemeo Rosso, "a citizen of Venice," and talking over this incident of Gulbedin, they made an agreement to hire a hundred and

twenty men and make an attempt to find the treasure. This little episode throws a flood of light on the Tanais of that day. Thus, previous to 1437 an Italian, presumably a Venetian, for our author supposes his readers know all about the fact, had been its civic ruler: a man came hither from Cairo having met there a woman from Tanais: thus showing the intercourse between these two places. Then, in the house of a Venetian citizen at Tanais, seven Italian merchants casually met on 25th Nov., 1437.

There evidently was a Tanais at the mouth of the Don (or Tanais river) and also "a plain of Tanais" (*il Campo della Tana*), both well known to the Venetians and Genoese, and both in the Europe of that day. For Ptolemy, describing plate 8 of Europe gives both the western and eastern mouths of the Tanais as the eastern boundary of "European Sarmatia." Since he elsewhere tells us that Tanais is between the "mouths of the river" (*et inter ostia est Tanais Civitas*) it was clearly in Europe. "The plain of Tanais" was on the west of the western mouth.

There were many fishing establishments around Tanais; our author had two, one forty miles up the river at Bosfagaz, which must have employed many men, for we incidentally learn it had "three machines for grinding salt." Another Venetian, Da Valle, had an establishment on the same river at Tumen, and there were several others around about, but we are not told who owned them.

We can readily understand from these facts that a continuous and brisk trade was kept up between Tanais, Venice and Genoa. Wine, fruits and oil were brought from Italy, and fish, furs and other articles taken back. And the volume of commerce had been much greater previously. Our author speaking of Gitrachan (now Astrakan) on the Volga, tells us that before "its destruction by Tamerlan it had been great and famous, for all the spices and silks that now go to Soria came to Gitrachan and were sent over the plain of Tumen to Tanais, to which place the Venetians alone sent six or seven large galleys to carry off the aforesaid spices and silks." He also adds that in those days neither the Venetians nor any other cis-marine nation traded at Soria. As a commercial centre, therefore, Tanais had been frequented by Italian ships and traders for centuries.

A short description of the various places on each side of the sea of Azov, out to the Black Sea, is given. Finally he went to Venice overland, crossing from Tanais to Gitrachan (Astrakan) up the Volga through Russia to Moscow, on to Poland and Germany to Frankfort. This would be about 1452. He narrates that, being in a shop on the

Rialto in 1455, he saw two Tartars who were held as slaves by the owner of the shop. He complained to the authorities who, after investigation, set the men free. Our author took them to his house and kept them until "the ships were leaving for Tanais," when he sent them home. These were really the Tanais line of ships for the words are, "*Col partir delle navi della Tana io li mandai a casa.*" Trade between Venice and Tanais was still brisk in 1455. At that time John Cabot was an able-bodied seaman, and it is more than probable he commanded a ship of the Tanaian line.

Some of the leading merchants of Venice were interested in the traffic, as the names of the "seven merchants" who met at Tanais in 1437 disclose. The trip therefore to that place was both profitable and adventurous. Who can doubt that Cabot made it more than once.

We may add that from the first ages of the Christian era Tanais was an Episcopal See. Although for centuries no Bishop has resided in it, it is still a Titular one. In 1827 Bishop Fraser was consecrated with the title of Bishop of Tanais, and appointed Vicar Apostolic of Nova Scotia.

Incidentally our author refers to a Friar of the Order of St. Francis, showing that a monastery of that Order existed at Tanais in 1438.

I do not know when this interesting booklet first appeared. There is positive internal evidence that it was not written until, at least, thirty-five years after an event which took place in 1438. As our author returned from a long sojourn in Persia, an account of which is also published, in the year 1473, and as he must then have been verging on 70, it is probable the story of his voyages appeared in 1474 or 1475.

Notwithstanding the blighting influence of Turkish rule which destroyed the trade of Capha and other ports, Tanais remained a great commercial centre for at least one hundred years after its capture. The Venetians and Turks frequently fought, but they exchanged commodities more frequently. Gerardus Mercator in his description of "Taurica Chersonesus," written before 1569 for his great Atlas, speaking of Tanais, which the "Ruthenians call Azac," says :—"It is a noble emporium to which merchants from various parts of the world sail, where there is free access for everyone, free permission to buy and sell." "*Estque nobile emporium, ad quod mercatores ex diversis Orbis partibus commeant, ubi cinque liber patet accessus, libera emendendi et vendendi facultas.*" Evidently it was the real "open door" of which we have lately heard so much.

The Tartars and Turks, as Mercator insinuates, had a superabundance of fish of which they rarely partook, and were very well pleased

to trade them off with the Latins. He also tells us that the *Palus Maeotus* of Ptolemy was called by various names by different nations; by the Italians it was named "The Sea of Tanais," (*Italis, mar della Tana*).

In view of all these facts it is not rash to conclude that before, during and after Cabot's time, the city, river and country of Tanais were well known, to Italians at least, as definite localities in Europe, bordering on what was then called Asia. Also, that it was most natural a Venetian captain, speaking to an Italian about his discovery, should take that great trading centre so well known to both, as a standard of latitude.

Now, as to the latitude of Tanais, and the blunder into which Dr. Dawson thinks I fell, the blame for which he kindly throws upon the person who consulted Ptolemy for me, a few words must be said. I fell into no blunder, and I consulted Ptolemy myself, not in a hurry, not with noisy surroundings, but in the quiet of my study. Among many treasures St. Mary's College Library, Halifax, has a Ptolemy, Mercator's great atlas, Jodocus Hondius' edition, and Bleau's very rare and beautiful works.

In the Address, it was, I thought, made clear that I used Ptolemy only for the purpose of showing the location, of the Tanaitæ. After having done this the Address said :—"If now we look on the map," viz :—the map anyone might have before him, not Ptolemy's, "we shall see that the Don begins its great bend at the fiftieth degree." The latitude of Bristol too is given as it appears on modern maps. I did this because I knew the human mind had not been inactive during the Middle Ages, and that Ptolemy's latitudes had been frequently corrected, and that places in America would be as much too high as were those in Europe in Cabot's time.

Dr. Dawson assumes that Cabot could have consulted only two editions of Ptolemy, that of 1478 and another of 1490. Why might he not have had a copy of the Latin version by Boethius, although several centuries old? Or why might he not have had a copy of that of Nicholas Cardinal de Cusa (*Cusanus*) of about 1464? Mercator had one, as he testifies in the preface to his corrections of Ptolemy. There were other sources of information open to Cabot, but before considering them let us argue from Ptolemy. The latitude of the country of Tanais was, of course, for seamen and practically for all others, that of its port. In those days the city was everything, the country a mere adjunct. The latitude of the "Country of Venice" would be that of the city. The latitude of the mouth of its harbour is, for seamen, the

latitude of a city. The course is steered to that point. Now Ptolemy gives the latitude of the western mouth of the Tanais, the one nearer Venice, as 54.10, and that of the mouth of the Bristol Channel as 54.30. Hence, Bristol was above Tanais, and part of the country of Tanais was still lower.

But Cabot was not confined to Ptolemy for a knowledge of the latitude of Tanais. We must bear in mind the editions of Ptolemy sought to give a faithful copy of the original, and carefully excluded corrections. They were not used as manuals of instruction, but only as now for reference in regard to early geography. Bertius' edition of 1618 is a proof of this. No one, I take it, will maintain that the latitude of a place so well known and frequented yearly by so many ships as we have seen Tanais was, could have been unknown, especially to the Venetians. Skilful navigators visited these waters and certainly took observations. For some reason the latitude of the time was about two degrees too high, but it was not six. They soon ascertained that Ptolemy was four degrees astray.

We are not left to conjecture merely on this point, we have positive proof that in the great schools of Italy, the study of cartography was ardently pursued. We shall confine our remarks to the fourteenth and fifteenth centuries. We shall quote largely from Tiraboschi.[1]

In the Imperial Library of Vienna there were preserved in Tiraboschi's time, "nine nautical charts," the work of Peter Vesconte in 1318, and in the Royal library at Parma a cosmographical map six feet square, done in parchment, by "Francisco Pingano, a Venetian, 1368." On it are numbers which seem to indicate the degrees of latitude: cities, harbours, anchorage and rocks are marked.

In 1457, Alfonso V. of Portugal, gave an order to Fra Mauro, of the Monastery of Murano, near Venice, for a planisphere for the use of sailors. This monk had already made one on which the Portuguese discoveries were marked. The new one was completed in 1459 and sent to Lisbon. A gold medal was struck in the monk's honour, on which he was designated as "Cosmographus incomparabilis." In 1471, Grazioso Benecasa published six maritime charts, and in 1479, Antonio Leonardi gave to the world two geographical maps. In 1480, a complete treatise of geography by Berlinghieri appeared. Tiraboschi says it was not a mere translation of Ptolemy, although use had been made of his work, the style was better and the edition more correct.

Seven other nautical maps published shortly after 1459 were also in the Imperial Library of Vienna. We could easily add to this list but

[1] Storia della Letteratura Italiana, Tom. VI.

it would surely be superfluous. The study of astronomy was ardently pursued, too, at the time of which we speak. True, some indulged in the foolish attempt to read the future by the stars. Really this is not more silly than the efforts, in our day, of professors of physical branches of study (for they are not sciences) to decide questions of revelation, or to evolve a system of ethics from biology, geology or anatomy. But even in the writings of those who practised astrology, many great astronomical truths were taught which helped to render more accurate solar and sidereal observations. In 1480 a book of astronomic tables for Constanzo Sforza was written by Lorenzo Bunnicontri and Camillo Lunardo. For a number of years previous to that date, the former had been professor of astronomy, both in Naples and Florence.

A great astronomer, as well as a learned linguist, was Paolo Toscanelli, born at Florence in 1397. His biographers attest that he was assiduous in his observations of the heavenly bodies, and that he corrected the astronomic tables of King Alphonso and those of the Arabs. And Cristoforo Landino relates that he himself often heard him questioning minutely those who came from the countries bordering on the Tanais.

One other celebrated astronomer of the time may be mentioned,—Mulles of Konigsberg, known as Regiomontanus. He came to Italy in 1463, under the auspices of Cardinal Bessarion, through whose influence he was appointed professor of astronomy at Padua. After a time he went to Venice, later on he returned to Germany. In 1475 Sixtus IV., wishing to reform the calendar, called him to Rome, where he died before beginning the task assigned him. His attainments in astronomy were evidently held in the highest esteem.

The study of astronomy was, therefore, assiduously prosecuted, the observations taken became more accurate, astronomical tables were published, treatises on geography correcting the errors of Ptolemy appeared, maps, local and general were multiplied, and most significant of all, charts showing the harbours, rocks and location of towns were issued. In the great nautical schools of Venice and Genoa these, and not Ptolemy, were the text books. In them was found the latest information. The best navigators of the Mediterranean had been going for long years to Tanais, had been taking, of course, observations with improved instruments, and making their calculations by corrected tables. Can we doubt they did not discover the error of Ptolemy, or that, having discovered, they did not report it, or that the correction was not made on the charts? Venice lived and flourished and waxed powerful by reason of her commerce, her sailors were the most skilful in Europe,

her schools of navigation the most renowned. As we have seen, her commercial relations with Tanais were extensive and continuous. A thorough knowledge of this port and its approaches would be one of the first requisites for a captain seeking lucrative employment. Of this there can no longer be any doubt. Why this uninterrupted issuing of maps and charts, this correcting of tables of calculation, and this perfecting of nautical instruments, if they were not being applied to practical uses ?

We are not sure John Cabot visited Tanais, few, however, will now look upon it as anything little less than certain. Even if he did not make the voyage to Tanais, he knew its latitude as well as he knew that of Bristol, for he was learned in all the knowledge of the Venetians. When he discovered Cape Breton he may, indeed, have thought he had struck the eastern seaboard of Asia, but he was perfectly well aware that it was no part of Tanais. Even the most unlettered of his sailors knew that east of Tanais there stretched away the vast plains of Tartary, and beyond them "far Cathay." What he did, for a time, think, was that he had touched the shores of Asia lower down on its eastern side than Tanais was on its western border. Hence he concluded its climate should be more genial, and its resources more abundant. Da Soncino, like all learned Italians of his day, knew the position and commercial importance of Tanais. It was therefore most natural that Cabot, when giving him an account of his discovery, should make a comparison between their respective latitudes. That he made the comparison the clear words of Da Soncino's letter show. What prevented many from realizing this was the idea that Tanais was an indefinite region somewhere in the East. As we have produced the testimony of an ambassador of the Republic of Venice to the State of Tanais (*Ambasitore alla Tana*) who dwelt in those parts for sixteen years, from 1436, which shows the city to have been a great and well known emporium with some territory, at least (*la terra* and again *il campo della Tana*), all in Europe, that idea, together with the objection founded on it, is no longer tenable. Hence the Presidential Address proves from the writings of unimpeachable contemporary authorities, that Cabot's landfall was on Cape Breton Island.

All the authorities cited by Dr. Dawson to prove the lack of geographical knowledge in the Middle Ages have sounded the shoals, but not the depths of the mediæval mind. This is the easier process of the two. A short line and a light plummet will find the sandbanks, but depths are only sounded by measures of equal depth. Hence we need not be surprised that their idea of the dip of the mediæval mind, which

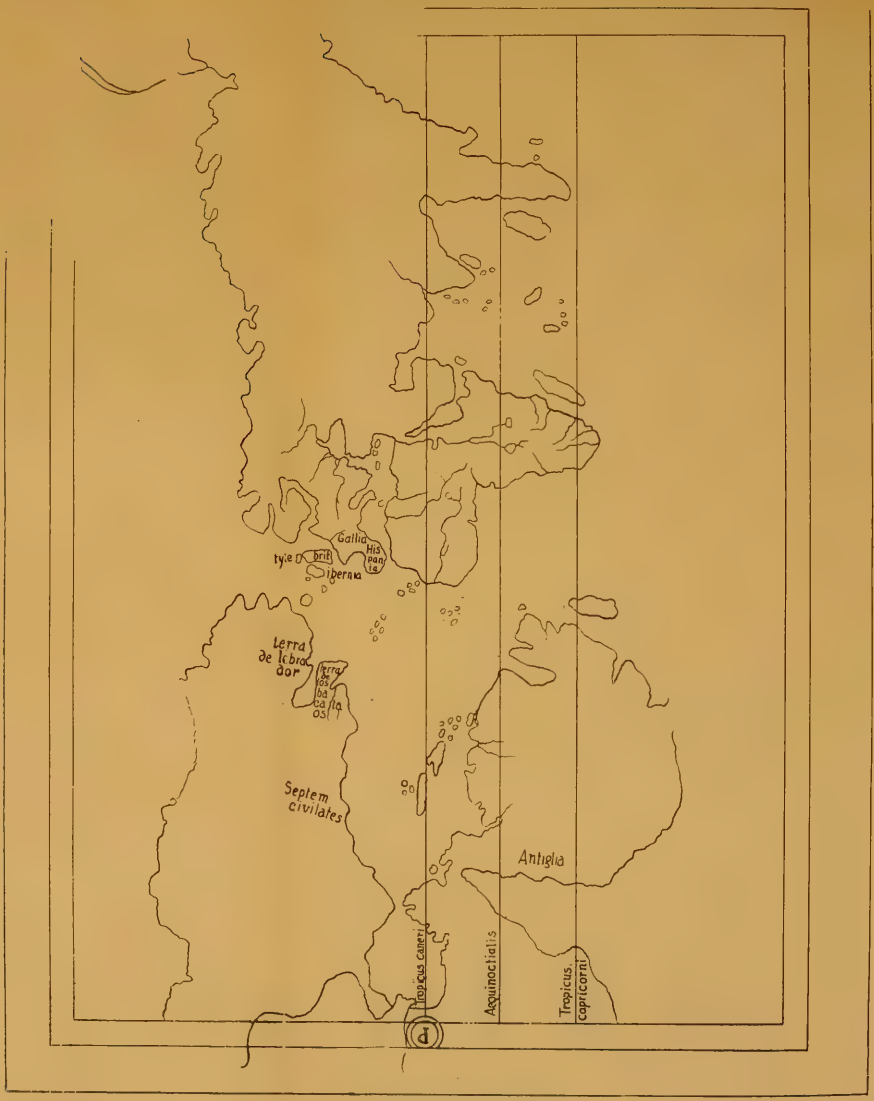
was eminently profound, is quite incommensurate. We take facts, not names, as our basis of reasoning,—and facts show that the river Tanais was held by the men of Cabot's day to be the line of division between Europe and Asia. Hence for them all of Asia was east of Tanais.

Thirty years ago, we in Canada, called all the country from Lake Superior to the Pacific Ocean, the Northwest, and very vague ideas of its extent prevailed. In the same way a certain vagueness of conception regarding the extent of Asia obtained in the Middle Ages, but this no more argues the ignorance of the people, or the lack of interest in geography in the one case than in the other. The study of geography was never neglected. It was prosecuted in the schools of Rome during the Empire, when maps were painted on the walls of school rooms and corridors, on which could be seen amongst other things "the rivers of Persia and the arid fields of Lybia, and the united horn-like branches of the Rhine, and the many mouths of the Nile." So speaks Eumenius Rhetor when addressing the Prefect of Gaul. There were portable maps, also, and in the reign of Valentinian generals were to provide themselves with detailed maps of the region in which war was to be carried on. The Church succeeded as heir to the knowledge of the Roman schools, and we find Boethius, a most learned mathematician and friend of St. Benedict, cultivating the study of geography with assiduity. Cassiodorus, who founded a monastery in Calabria, urged the monks under him to study geography so that they might know where the places of which they read were situated. He recommends the writings of Julius Orator and Marcellinus, and the table or map of Dionysius, so that "the eyes might see what the ears had heard." Ptolemy is also recommended.

We learn from Eginhard's Life of Charlemagne that, amongst the "treasures of that Monarch were many books and four plates or maps, three of silver, and one of gold. The most costly one had three orbs (presumably the three Continents) joined together, on which was a fine and minute delineation of the whole world."

In the annals of the Order of St. Dominic at Colmar, under the year 1265, we read :—"I have depicted a map of the world (*mappam mundi*) on twelve sheets of parchment."

There are many facts in Ecclesiastical History which prove that the knowledge of geography was not so very vague. Not only throughout Europe, but also throughout Asia and Northern Africa, the gospel had been preached during the first few centuries of the Christian era. Bishops were everywhere, and missionaries were going to and fro. Provincial, national and general councils were held. In these latter,



(Op. p. 439.)

FIG. 2.—EGERTON MS. BRIT. MUS.

Bishops from all parts were assembled. Communication was frequent between the Pope and the various places where Christianity existed. In the Presidential Address it was pointed out how well known Greenland had been from the eleventh century, that a Papal Legate had probably gone thither in the twelfth. In 1177, Alexander III. sent a legate to the Grand Khan; in 1245, Innocent IV. sent two missionaries to the Tartars. In 1271, Gregory X. sent missionaries to Chi Tsou, Emperor of China, by whom they were well received. In 1257, missionaries of the Order of St. Dominic were sent to Thibet and others to northern China or Cathay. In 1314, Clement V. appointed a Franciscan Father, Archbishop of Pekin. Another Franciscan succeeded him in 1330. In 1314, Friar Odoric started on a missionary tour. Having embarked on the Black Sea, he sailed for Trebizond, thence overland he passed through grand Armenia, and on to Tauris and Sultania. He pushed on towards India and reached Ormus. He then went by ship to Malabar, Cape Comorin, the islands Java and Ceylon. Had he been a nineteenth century Philistine instead of a zealous fourteenth century Friar, the story of his travels and adventures would, no doubt, have been fully blazoned abroad. In 1330, John XXII. sent the Pallium to John de Core, Archbishop of Sultania (the seat of the Emperor of Persia) by the Bishop of Colombo, Ceylon, and Thomas, Bishop of Seniscentia. Both were suffragans of the Archbishop of Sultania. Many similar facts might be mentioned; but these, I think, will suffice to show that notwithstanding Dr. Dawson's high opinion of his authorities, "the attentive reader" is not likely to be as much "impressed" by the profundity of their research as he imagines. The "attentive reader" will realize the need of a safer guide in threading the mazes of past history, and will doubtless conclude that since so much intercourse was kept up between nations far apart, the general knowledge of geography could not have been so very *vague* and *childlike*.

The second objection to be answered is that the Gulf of St. Lawrence was not opened up until 1534, and I am challenged to produce a map prior to that date on which it is shown. I might say Dr. Dawson has saved me the trouble, he himself has produced two, Verazzano's and Maggiolo's. Mr. Beazley, in his "John and Sebastian Cabot," referred to a *portolano* of 1508, lately acquired by the British Museum, which showed the Gulf of St. Lawrence as a great inland sea. I have secured a photographic copy of the part which shows the new world, and as can be seen at a glance, all Dr. Dawson's maps and contentions based thereon, are not merely "waived aside," they are very effectively confuted. The map is reproduced herewith. (Fig. 2.) The Gulf is very

accurately placed, and some bold navigator must have gone far into its recesses. A comparison of its size with that of the Mediterranean will make this evident.

This map tends to confirm the contention of those who maintain the Portuguese entered the Gulf in 1500. Father Bressani, S.J., who came to Quebec in 1642, in an abridged relation of some Jesuit Missions in New France, says: "it is certain the French took possession of it (New France) in 1504. They made several voyages to it in 1508, 1523, 1524, 1534, etc." Father Martin, S.J., who translated this account into French, in an appendix says the Portuguese visited the River St. Lawrence in 1500, and that in 1506 Jean Denis, of Honfleur, made a map of the Gulf of St. Lawrence. "*1506, Jean Denis, habitant de Honfleur, trace une Carte du Golfe St. Laurent*"). True, we cannot produce that map, but who can tell how soon it may be unearthed? Bressani, in 1642, naturally had access to sources of information unknown to us, and he could not have had any wish to mislead those at whose instance he wrote. When therefore, he says, "it is certain the French took possession of New France in 1504," we have no reason to doubt his word. Equally when his translator asserts in a note that in a certain year a certain individual drew a map of the Gulf, we must suppose he had good authority for his statement.

We are now certain the Gulf had been entered through the Straits of Belle Isle, which according to Dr. Dawson, are only twelve miles at their mouth, at least thirty-five years before Cartier's time. We can easily believe that Jean Denis entered by the wider straits (forty-two miles, to take Dr. Dawson's restricted measurement) a few years earlier.

That Cabot entered the Gulf (unwittingly we grant) in 1497, is placed beyond any reasonable doubt in the Address. It is scarcely a refutation of the arguments therein produced from the letters of Pasqualigo and Da Soncino, to repeat that the Gulf was not opened up until Cartier's time. The only proof attempted of this assertion, an assertion utterly incredible to one who knows how the coast had been frequented by Breton and Basque and Portuguese, and who reads in writings of men contemporary with Cabot, that he searched every inlet and bay and river of the northern coast line to find a passage across is, you cannot produce a map which shows the Gulf.

Let us understand terms and avoid equivocation. If it be meant that the Gulf was not accurately surveyed, islands, rivers and bays correctly located, we may admit that proposition. No one, I presume, ever asserted the contrary. But anyone not anxious to read his own view into the maps of Maggiolo and Verazzano, will recognize that they have opened up the Gulf very extensively. (See figures 3 and 4.) In

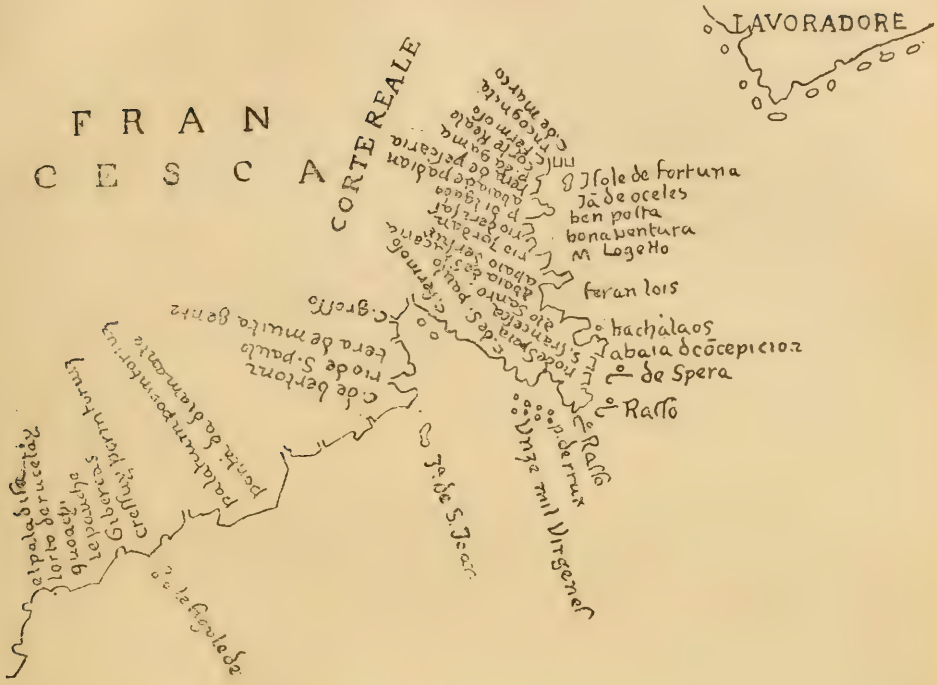


FIG. .—VESCONTE DE MAGGIOLO, A.D. 1527.

FIG. 4.—VERAZZANO, A.D. 1529.

the former, C. Grosso is Gaspé Head, as we shall show; the opening by it the St. Lawrence; that to the right, the Straits of Belle Isle. Verazzano unmistakably gives P. E. Island, and calls it St. John, although unduly removed from the shore of Nova Scotia, and traces the lines of the Gulf almost up to Gaspé. To illustrate these more clearly let us consider two other maps given by Dr. Dawson in his paper of 1891, viz:—Gaspar Viegas (Fig. 5) and one from Kretschmer (Fig. 6). They are both fairly good maps of the Gulf, much more accurate than several later ones. Dr. Dawson, who can find the "greater Magdalen" (it is only twenty miles long) no matter how far it may be out of its proper position, or howsoever orientated, will not surely exact absolute accuracy even when a map does not show his interesting big island. These maps are said to make the Gulf too small. That is only apparently true. Reduce an ordinary chart of the Gulf to the same size and their general accuracy will be made manifest.

Now let us examine Viegas' and the Kretschmer maps and we shall see how well known the Gulf must have been to sailors.

On both maps Cape Ray is most appropriately named C. da Volta, "the turning Cape," that is the point where you turn into the Gulf. Following the north shore we see the outlines of St. George's Bay, then Bay of Islands called R. Hernoso, then the outlines of Bonne Bay. Continuing north we find an opening named on both maps R. da Traveca. This is as suggestive as C. da Volta, for it tells that this water or river leads across. Traveca, with C soft, now written Travessa, is a cross path, a traject, a lane. Hence R. da Traveca is a river path across. Across what? Or whither does it lead? It leads across to the ocean beyond, and is the first known name of the Straits of Belle Isle. The meaning is quite as clear as that of the Turning Cape, and proves that our cartographers were cognizant of the existence of an exit here from the Gulf.

The shore line is resumed on the north side of the Straits and we proceed around trending westward till we reach a river marked C. Coprido, that is Long, or large river. This is either Esquimaux or St. Augustine's. Next we read on both maps Costacha. It is neither a river nor a cape, it means a level or smooth coast. Now there is a long stretch of level coast between the Esquimaux and little Mecattina rivers. Hence we are sure of our position, and we see how carefully the country had been examined. Pursuing our course we find Pegna or Small Bay. This is Wolf Bay where the Hudson Bay Company have a trading post. Then we reach R. Folhas, or Leafy River, the northern mouth, I think, of the St. Lawrence, as C. da Golfa, the

FIG. 5.—GASPAR VIEGAS, A.D. 1534.

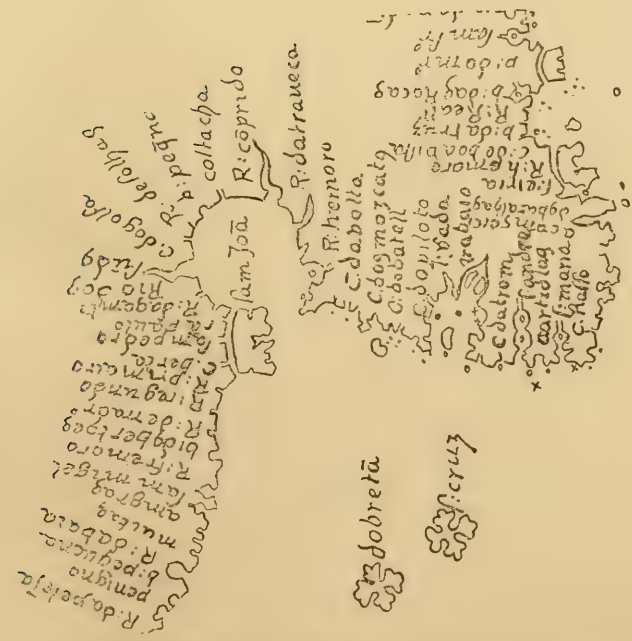


FIG. 6.—PORTUGUESE MAP FROM KRETSCHMER.

"Head of the Gulf," is Table Head, 400 feet high on the Island of Anticosti. South of this we have Rio dos Fudos, the "River of the Bottom," or as we say, the head of the bay, viz., the St. Lawrence. Here again we are absolutely certain of our position, and we can realize how thoroughly the Gulf had been explored. How far the head waters had been examined we know not; but some one had gone up far enough to ascertain that it was the Rio dos Fudos. Coming south from this point we reach R. da Gente, River of the People, or where there are many natives. Now we know that this was around the Baie de Chaleur. This is a well known fact, and our position is still certain. Continuing we have R. S. Paulo. The only river worth noting on that shore is the Miramichi. Passing along we find S. Pedro, without doubt indicating George's Bay. Finally we reach C. Berta, clearly indicating, as it often did, Cape North, for as yet the Straits of Canso were unknown. Compare these maps with a chart of the Gulf whilst following the shore line, and attend to the significance of the names, and the truth of this reading will be apparent. One will also be convinced that the Gulf had been carefully explored.

Turning now to Maggiolo's map we find *Rio de S. Paulo*, and *Terra de Multa Gente*, "the country of many people," or the well inhabited country. This, of course, corresponds to the *Rio de Gente* of Kretschmer's map. Hence whoever supplied the information for Maggiolo's map must have gone up as far as Gaspé Head.

Dr. Dawson gives the date of Maggiolo's map as 1527. Mr. Beazley says the date is 1516. I do not know which is the correct one. In either case the Gulf was well opened up before Cartier's time.

If we examine the coast line north of Cape Race (C. Rasso) we shall find Conception Bay under its proper title. Trinity and Bona Vista Bays are also given under other names. The cartographer does not draw the outlines of these bays, he leaves open lines and writes, "to Conception Bay," etc. Continuing north we reach *P. da Gama*, Deer Point. On Reinel's map, as well as on the so-called Cabot map, and on others of the same century, this *C. da Gama* or *P. da Gama*, marks the entrance of the Straits of Belle Isle. Sometimes it is our Cape Bauld, at other times, it would appear to indicate the Cape on the northern shore of the Straits. On Maggiolo's map it indicates Cape St. Lewis and *P. del Gado*, which on Cabot's map is Cape St. Lewis, on Maggiolo's is Cape Bauld. Between these names, *P. del Gado* and *P. da Gama*, Maggiolo leaves open lines and writes, "*A baia de padian*,[1]

[1] I think it should be Gadian, meaning Cattle Bay, that is, Seal Bay, for P. del Gado is Seal Point.

terra de Pescaria," "To the Bay of Padian,[1] the country of fisheries." He knew, therefore, the Straits of Belle Isle led into the great Gulf where so many fishermen plied their trade. Yet he has not traced the Gulf for us at its northern entrance. Whilst the lines of this map do not reveal his knowledge of the vast sea behind Newfoundland, his words proclaim it unmistakably. Dr. Dawson cannot find any trace of P. E. Island, the St. John of Cabot, on any map prior to Champlain's second one. Two reasons may be assigned for this. First, he began his studies of the landfall with the intention of proving (as he lets us know in his paper of 1894) that P. E. Island was not Cabot's St. John. Secondly, whilst he can make all possible allowance for displacement both as regards latitude and longitude in the case of the Magdalen Islands, he insists on finding P. E. Island laid down with modern accuracy, or he will have none of it. This mental attitude is less than judicial. A glance at Verazzano's map, especially after reading what we have proved regarding the way it opens up the Gulf, will reveal beyond doubt P. E. Island called by its old name, St. John.

Viegas' and Kretschmer's maps give it more accurately located in many respects, yet brought too far out of the Gulf. This manner of displacing islands is quite common on old maps. Kretschmer names it St. John. It is idle to pretend that this island is Cape Breton. We have in both instances Cape Breton marked on the mainland. For scores of years Cape Breton denoted now the whole island, now the northern part of it. On both maps under consideration it indicates Cape North unduly easted. This can be seen from its bearings to Cape Ray on the Newfoundland coast.

Again, consider the length of the Straits dividing this island from the mainland. Both in relative length and their crescent form, they agree exactly with the Straits of Northumberland, whilst by no stretch of the imagination can they be made to bear any resemblance to the Straits of Canso. The latter are only eighteen miles long, they begin and end in deep bays of which there is not the faintest indication on the maps. Moreover the northern end of San Joa will be seen to agree fairly well in its bearings to *Rio de Gente* (Baie de Chaleur).

The shape too, of San Joa resembles that of P. E. Island, especially as given on maps of the seventeenth century, whilst it bears no likeness to Cape Breton.

If San Joa be Cape Breton Island, we are asked to believe that the old name of the Breton's Cape seen on Verazzano's and Maggiolo's maps, and other early ones, was carried west to the shores of Nova Scotia. Neither Viegas nor Kretschmer was so ignorant as to be guilty

of this. Dr. Dawson's theories make too large a demand on our good opinion of the elementary knowledge of early cartographers. Even if we admit, and it is not a fact, that in those days Cape Breton marked the headland of that name and not the northern part of the island, still these careful map drawers must have carried the name more than seventy miles west to Cape Canso. This distance is of no account when one wishes to make a point. Dr. Dawson speaks of Cape Canso in relation to Cape Breton headland, as "the neighbouring point of Nova Scotia."

Again, if San Joa be Cape Breton, how were the Straits of Canso discovered? The map drawer scarcely entered by them, he must have gone out through them. As he made the circuit of the Gulf we must suppose he entered Cabot's Straits, and went along the north shore examining and naming rivers, he eventually found the St. Lawrence and ascertained it was the head of the great sea, and so named it. *Rio dos fudos* assures us of this, as does also the *C. do golfa*, "the head of the gulf." Coming down southward he saw Baie de Chaleur and named it River of the People, and Miramichi which he called St. Paul's River. Why instead of following the coast of New Brunswick he should strike out for what he could not see, viz., North Cape, P. E. Island, and sail along to East Point, and then instead of trending northward to his place of entrance, should dash down south only to find himself back between Miramichi and Baie de Chaleur (for on his map that is where the so-called Straits of Canso begin), is more than a Chinese puzzle. Small wonder when he discovered that after having sailed two hundred miles away from a certain point he was back to it again, he should feel like crawling out by the smallest hole possible, and thus come forth by the Straits of Canso. This is no fancy sketch, this is what must have been the experience of that adventurous navigator when he sailed round the Gulf, and out by Canso, as his map shows,—always, of course, supposing that San Joa is Cape Breton. On the other hand, taking it for P. E. Island everything is plain and intelligible, except that the southward trend of the coast from Cape Gaspé to Shediac, is carried on to Cape North. In view of many similar distortions of the shore line on numerous early maps, this need not excite our wonder.

Finally, if we read the names on the Kretschmer map along the southeastern shore we find three rivers named, then we come to *Bi dos Bertoes*, "Bay of the Bretons." We now know with certainty where we are, viz: at St. Peter's Bay. Of this there can be no doubt. Now the southern mouth of the Straits of Canso is just west of this Bay. Consequently one map-drawer did not know Cape Breton was an island,

(Op. p. 447.) FIG. 7.—MAP OF DIEGO HOMEN, A.D. 1558.

had not sailed through the Straits, and most assuredly the name Cape Breton on the map does not mark any point in Nova Scotia, but is, where it always was, on the island of that name. Evidently then San Joa is P. E. Island. We can well understand why Mr. Harrisse should fail to recognize in San Joa, Cape Breton Island.

To still further illustrate these maps, and to show P. E. Island on two others, also Portuguese, of a later date, we reproduce here the map of Diego Homem, 1558, and that of Lazaro Luis, 1563. Although they both bear witness to a very considerable knowledge of the Gulf, neither shows the Straits of Canso, and both show P. E. Island; Homem places it almost in its true position, whilst Luis brings it too far north. But there can be no mistaking it in either case. The shape of Kretschmer's San Joa is retained by Luis thus showing the identity of the two. Homem gives the true shape much more accurately and calls it *ille de Sabloes*, a name which still lingers in the De Sable shore and river. The name, judging by any part of its shore, is most appropriate to P. E. Island. It is often spoken of as "a sand bank," by those who have seen only the beautiful sandy beaches which form an almost unbroken girdle for the rich loamy soil of the island.

We do not think any one will seriously attempt to dispute the clear reading of these maps; not only does the location proclaim the truth of our contention, but in both cases the Magdalen group is given, as is also St. Paul Island. Luis does not name any of the islands, but he gives the larger Magdalen considerable prominence, and shows the smaller ones. Homem names the larger Magdalen *Isla de fenefaus*, and several small conventional ones *Brion*. To these should be added the Cabot map, 1544, which shows and names P. E. Island St. John. It would be the merest trifling to contend that it is the Magdalen group.

We ask any one sincerely interested in this question to sit down quietly and examine and collate the various maps to which we have referred. We venture to request them to forget the opinions of men of great name, and to read and judge for themselves how far the explanations here offered are founded on solid reasons. Could the explorers have mistaken some little creek or inlet on the shores of P. E. Island, or Southern New Brunswick for the head river of the great bay? What point on these shores did they dignify with the title of Big Cape, and Head of the Gulf? Bear in mind that we know as a matter of fact that the "place, or land, and river of the people," was around the Baie de Chaleur. Are we to suppose the map drawers glanced in at the Gulf and then drew a small circle to represent it, putting down names at random? Surely not. A close study reveals that they prob-

ably entered by Cape Ray, coasted by St. George's Bay, Bay of Islands, Bonne Bay, went further north, then crossed the mouth of the Straits of Belle Isle and coasted around to the St. Lawrence, which they ascertained was the head of the bay and so named it. Continuing southward they investigated the two large inlets, Baie de Chaleur, where they saw many natives, and Miramichi. As we have proved conclusively that the San Joa of Kretschmer's map cannot possibly be Cape Breton Island, the navigator passed down the Straits of Northumberland and out by Cape North.

Fig. 8.—Map of Lazaro Luis, A.D. 1563.

I trust no one will think it silly presumption on my part to differ from so many learned persons in the reading of these maps. A fairly intimate local knowledge, the careful gathering up of clews supplied by names on the maps, and many hours of patient study examining and collating should entitle one to speak. It is not improbable the course around the Gulf may have been the same as that of John Cabot, but that is not a question of much importance. The main fact is, we have produced six maps, the earliest at least one hundred and three years, the latest fifty-nine years, prior to Champlain's second map, all of which clearly show P. E. Island, three of which, and they the earliest, call it

St. John. If evidence can settle any question the existence of P. E. Island on early maps, has been put beyond controversy. We might add Mercator's and Hondius' maps to the foregoing.

The arguments in the Address which went to show how every fact related by Pasqualigo and Da Soncino proclaimed a landfall within the Gulf, need not be repeated. The criticism of Dr. Dawson does not refute them. He has produced, as he tells us, a "catena" of authorities regarding the climate and soil of Cape Breton. Yes, but no chain is stronger than its weakest link. In this chain the weak link is where the strong one should be, if it is to be of service to his cause. We know that John Cabot could not have examined the ground to any extent, he only remained on shore a short time, as we are expressly told. Hence the coast on which he landed must have been good soil. This is not the case with the soil around about the headland Cape Breton, as Dr. Dawson admits. Hence it could not have been the landfall.

It is somewhat surprising that so keen an observer as Dr. Dawson should fall into the mistake of taking the words "upon the very Cape," in Hakluyt's account of the voyage of the "Marigold," as meaning the headland Cape Breton. (Trans. 1897, p. 201). It is safe to say it would be almost a physical impossibility to land on that point. Certainly no one except a drowning man would attempt it, and the crew of the "Marigold" were not in that extremity. The incident related is a strong confirmation of what was said in the Address about Cabot's experience. We must bear in mind that the restriction of the name Cape Breton to the headland so marked on modern maps, was not known in 1593, in fact it is not generally known to-day. Seventy-five per cent of the inhabitants of Nova Scotia will tell you there is no such Cape. Several well educated gentlemen who live on Cape Breton Island when questioned by me replied there was no Cape Breton except the Island. On early maps, and in the minds of early navigators, Cape Breton stood for all the northern part of the Island, or for Cape North, as seen on Viegas' and Kretschmer's maps. Like Cabot's ship, the "Marigold" had "wandered much," and finally made Cape Breton Island, evidently within the Gulf. Of this the description alone leaves no doubt. Some of the crew landed "on the very Cape," then they sailed four leagues to the west, and went ashore for water. Precisely, they landed in St. Lawrence Bay, about four leagues west of Cape North on the Gulf shore, where they found abundance of good water, and where they met Indians. The description, too, of the trees and berries is quite applicable to the country around this bay, but not to the land around the headland Cape Breton. Oaks never grew there as can be easily ascer-

tained, but they did grow, and grow yet, on the gulf shore. Again, it is contrary to what is well known regarding the habits of the Indians to maintain that they dwelt on the ocean seaboard. They never did.

It is unnecessary to say more on this point. If the patient student will read the Address in conjunction with this paper, and carefully follow the explanation of the maps to which we refer, he will, I think, come to the conclusion that the Cabot landfall was within the Gulf, and that P. E. Island is the large island seen on the 24th June, 1497, and named St. John.

The third objection to be met has reference to Cosa's map, on which Cabot's discoveries first appear. A careless expression of mine is made, in Dr. Dawson's paper, the occasion of a passing criticism which is not altogether unstrained. The Address said the northern coast line alone was Cabot's, "the map is the offspring of Cosa's imagination." Perhaps I should have said, the map, or coloured portion supposedly representing the shore in the northern part of North America. It seemed, however, that the reader would understand reference was not made to the map in general, but only to that particular part. Of that enough.

The Address stated that Cosa had procured a copy of Cabot's chart, and joined it to his map making it run east and west, instead of north and south. Proofs which, so far as I have seen, no one has attempted to confute, based on reason and facts inherent in the chart were advanced. If the theory was novel, the arguments were not far-fetched. Dr. Dawson thinks no scale of the chart could be found, as, he stoutly maintains, no scale was employed. To defend his views of the map he is compelled to class the drawings of John Cabot with those, not of a school boy, but of a toddler in the nursery. We hold Cabot had some sense of proportion, else he never would have been a navigator. It is objected, too, that the basis on which the argument for the scale rests is arbitrary. Some might be entitled to make that objection, but not Dr. Dawson. In his paper published in the Transactions for 1894, he locates the southernmost English flag, and Cavo Descubierto in practically the same latitude as I do. But apart from that, in calculations of this nature one is justified in assuming a scale as a working hypothesis, and which the conclusions afterwards prove to be no longer an hypothesis, but a fact. Now since by that scale, and by orientating the chart, as is minutely demonstrated in the Address, all difficulties in reading it disappear, the whole and its various parts are made intelligible, and islands are found in their proper position, we are justified in claiming that we have passed from the stage of hypothesis to that of

(Op. p. 451.)

FIG. 9.—FROM PTOLEMY.

actual proof. We ask those interested in the question to read carefully the arguments in the Address. It may appear at first sight arbitrary, to some, perhaps, reckless, to assert La Cosa tacked on Cabot's chart in a straight line, rather that at right angles to his own map. Dr. Dawson thinks it the "quintessence of hypothetical geography." Scarcely, since we have an exact counterpart of it in Ptolemy. In his day the British Islands were more familiar to him and the learned world, than North America was to scholars in 1500. Yet he set Scotland at right angles to the north of England, instead of continuing it in a straight line. The reproduction from Tabula 8 of Europe (Fig. 9) proves this. It is not necessary to print a map of Great Britain for the purpose of comparison.

I do not undertake to explain why Ptolemy so placed Scotland. It may be, as Dr. Dawson argues in regard to La Cosa, due to an "exaggeration of the east and west coast lines," seen, as he says, on some early charts. Whilst I do not know the cause, or reason, for this misplacement, I know the fact, that to make Ptolemy's map of Great Britain intelligible and in keeping with our ideas of geography, we must wheel Scotland up, placing it north and south. To do so will not be the essence, much less the "quintessence of hypothetical geography." Equally am I unable to explain why La Cosa misplaced Cabot's chart, but equally am I certain that we must treat it as we treat Ptolemy's Scotland. Then, and then only, does it become intelligible, and in keeping with what we know to have been Cabot's northward coasting on his second voyage.

In the Address unsuspected testimony from six different sources was adduced to show that Cabot had gone as far north as 67 or 67.30, "in the reign of Henry VII." That was during the voyage of 1498. I am not aware whether Dr. Dawson admits these proofs or not. They are, however, proofs which cannot be gainsaid. As Cabot was avowedly seeking an outlet to the northwest, and as he could not find one until he had reached Cape Chidley, he of course entered Ungava Bay. We need not, I take it, emphasize this. Keeping on his course he would be led into Hudson's Bay, and in seeking an outlet to the west he would encounter land at about 67.30 "trending to the east," where he turned back and ran down south to about 36.30. This is the story and the course of the second voyage handed down to us on authority that is not likely to be successfully confuted. Moreover, Francis Bacon tells us that not only did Cabot sail on the "other side of Terra de Labrador, until he came to the latitude of sixty-seven degrees and a half," but also he "made a card thereof."[1] This and the other testi-

[1] History of the Reigne of King Henry the Seventh, pp. 196, 197.

monies adduced in the Address open up the whole of Hudson's Bay and Strait "one hundred and ten years before Henry Hudson," as effectively, and for some, perhaps, more conclusively, than does my orientation of Cabot's chart. So Dr. Dawson should chide them rather than me for publishing this item of geographical knowledge. I merely republished it, and it appears to have been not an unnecessary labour.

We do not wish to think Dr. Dawson desires the greater part of page 173 of his paper to be taken in a serious mood, when he shows what dire consequences would follow to our Dominion were we to draw a straight line north from Cape Henry to Cape Chidley. Cabot was not concerned about longitudes, his object was to discover an outlet to Cipango, and he showed it was not to be found between the points 36.30 and 67.30 of latitude.

The example of Ptolemy's misplacing of Scotland shows there is no antecedent impossibility that La Cosa did not place aright Cabot's chart. We will find Ptolemy's Scotland fairly accurate when we orientate it, therefore, he had much accurate information. Leave La Cosa's map as it is given, and no information, no sense, no indication of even an elementary idea of proportion can be found in it. Yea, more, well defined islands bearing names cannot by any possibility be located.

Treat it as we must treat Ptolemy's Scotland, that is, place it aright, and at once everything is intelligible. Proportion, the first element of map drawing, is made manifest; the various islands appear in almost their true latitudes, that peculiarly shaped and peculiarly placed one, La Trenidat, the counterpart of which one would search for in vain, falls into the position assigned it by our best charts. So, too, do those two small ones, near Cavo d'Inglaterra, which are also unusually distinctive, and can be found nowhere else except a little below Cape Chidley.

Another and most interesting, as well as important proof that the chart should run north and south was taken from the names thereon, some of which had not been, so far as I know, previously understood. If my interpretation of those names is correct, our store of knowledge will be increased, and important clues will be supplied. All admit the map, or rather Cabot's part of it, to be obscure at least. Surely anything which can throw light on it should be welcomed, even did it prove that some particular theory would be no longer tenable. The truth will be worth more to us in the end than any triumph of our views at its expense. The Address quoted from an old log book to show

how it was customary to note any natural peculiarity of rock or headland, or hillock along the coast. The same custom prevails to-day as can be seen from reading the "Newfoundland and Labrador Pilot." If it can be shown that several of the words on Cabot's chart indicate striking natural peculiarities similar to those quoted in the Address from an old log book, or to those which can be cited from modern sailing directions, no one will be disposed to make light of the value to be derived from their interpretation. The words are on the chart, placed there either by La Cosa or Cabot. They are more tangible than the variations of unknown astrolabes, and their meaning of more service in tracing Cabot's course than surmises, based on conjectures, as to the probable effect of those variations. One short paragraph giving the true meaning of those words would be productive of more accurate information, than pages innumerable of suppositions which never pass, frequently do not even reach the stage of hypothesis.

Owing to the similarity of early Spanish to the Latin language, it was stated in Appendix C of the Address that La Cosa adopted Spanish or Latin terms. In fact, I believe now all the words were Spanish, but some of them could be called Latin also.

Illustrations of their meaning were quoted in Appendix C from cognate languages, a very natural and justifiable course. Now if the meaning, given in the Address, of Agron, Argair and other words on the chart, be correct, we have eight remarkable features of the coast described for us. It was shown in the Address that by applying the scale which locates so well the islands, etc., these eight remarkable features would be approximately located in the vicinity of natural peculiarities described in the "Newfoundland and Labrador Pilot," in words which unmistakably correspond. The force of this argument can be broken only by proving incorrect the meanings given, or by finding a succession of corresponding features elsewhere.

A scholar anxious to arrive at the truth should carefully investigate every source of information. I do not regret the hours spent in endeavouring to open up this one. Dr. Dawson, however, does not look upon it as worthy of consideration. The procedure is, he avers, based on the hypothesis that La Cosa was a classic scholar. Now, whether La Cosa was, or was not, a classic scholar is scarcely to the point. The words are there on his map, they were meant to express something. What was it? To what language do they belong? English? German? Low Dutch? Spanish? Italian? Latin? Surely it is not an idle task to attempt to decipher them. To shirk this labour does not appear quite in line with the remarkable industry displayed by Dr.

Dawson in fields less profitable. I fear his excuse for inaction, viz., "It will be necessary to cite some authority for La Cosa's classical attainments before discussing his etymologies," will be found disappointing. It might satisfy the galleries, but it will not convince the boxes. If a man makes use of compound words which express an intelligible idea, we have proof, at first hand, that he has a fair knowledge of their separate meanings, and a deftness in compounding them. In this way La Cosa has given testimony to his attainments. We know, moreover, that cartography did not come before "Humanities" in the schools frequented by La Cosa. It is scarcely necessary to add that the "Humanities" were thoroughly classical.

The method which I endeavoured to follow in the Address, and which I have continued in this paper, is based on the accepted canons of interpretation. The authenticity and reliability of documents such as Pasqualigo's and Da Soncino's letters, as well as the various testimonies regarding the highest degree of latitude attained by Cabot on his second voyage, were established. From the two first, the landfall was shown to be on the gulf shore of Cape Breton, and P. E. Island the island seen on the same day, and named St. John. This was done by simply taking the words of the text in their plain meaning, down to the minutest detail. When Cabot says he sailed "three hundred leagues" along the coast newly discovered, we do not make it three hundred miles, nor do we accuse the writers of vagueness of meaning regarding well known localities. We show how every detail of these letters is verified in our account of the landfall. So far as I have seen, no one else has attempted to harmonize those unsuspected testimonies with their theory, no doubt for the very sufficient reason that it cannot be done. It can no longer be held that "the country of Tanais" was an indefinitely located district in Eastern Asia for such men as Cabot, Da Soncino and the Duke of Milan, or in fact for Italians in general in the fifteenth century, neither can it be held that the Gulf of St. Lawrence was not opened up before Cartier's time. The proofs brought forward in this paper settle conclusively these points, and add, if it were needed, additional strength to the conclusions reached in the Address. By pursuing this course we have never found it necessary to make any accusations against either the competency or honesty of our authorities, in order to discount the force of their testimony. By orientating Cabot's chart we do not imply, much less assert, that La Cosa was not a celebrated cartographer; no one will deny the value of Ptolemy's maps, yet even school children will proclaim (I know it from having shown them his Great Britain) that Scotland is misplaced.

Great Homer nods occasionally, but he remains Great Homer still. So it is with La Cosa. It is, however, to be borne in mind that his map of 1500 was never reproduced, and was quickly lost sight of in Spain.

The glory of having been the first to open up Hudson Straits and Bay belongs to John Cabot. The witnesses quoted in the Address were competent ones, they could not have had any sinister object in view in writing as they did. They set down as a well known fact, not as a surmise, or as a debatable question, that Cabot in his search for a northwest passage to the east, penetrated the frozen regions as far as the sixty-seventh degree and a half. The chart, read by the scale given in the Address, confirms their testimony. Indeed, it is quite probable that it was a copy of this very chart which "hung in the Queen's Majesty's Privie Gallerie at Whitehall," and which Sir Humphrey Gilbert saw, and to which Francis Bacon refers. Thus both by internal and external evidence we prove that our reading of Cabot's chart is correct, and the course of the second voyage is made to depend, like that of the first, on evidence, not conjecture.

VI.—*The Assault of Brigadier-General Richard Montgomery and Colonel Benedict Arnold on Quebec in 1775. A Red letter Day in the Annals of Canada.*

By SIR JAMES M. LEMOINE.

(Read May 25, 1899.)

Every country has in its history particular dates which, after a lapse of years, become, so to speak, crystallized in the minds of the people. One may mark a victory; another may commemorate a defeat; a third, record a public calamity. Champlain's old fortress is no exception to the rule.

It is, therefore, of paramount importance that the annalist, in the accomplishment of his sacred trust, should give a true record of past events, sparing neither time nor research in unravelling the tangled web of the occasionally obscure, dry-as-dust documents on which a date may rest.

The day when Quebec's brave defenders saved the province to the British crown, in 1775, is without doubt, by its far-reaching results, one of those unforgettable epochs in its history.

It was accordingly a surprise to me, on perusing Dr. Kingsford's elaborate work on Canada, to find that so far I had wrongly read history; that, in fact, the gallant surviving militia-officers, who annually for more than twenty seasons commemorated within our walls by a public banquet (of which such flourishing accounts occurred in Neilson's "Quebec Gazette") the repulse of Montgomery and Arnold at Près-de-Ville and the Sault-au-Matelot, had seemingly forgotten the exact day on which they had fought and won; that the glorious date I had taken especial pride in recording in many of my works was wrong; that the innumerable despatches, letters, memoirs and diaries left by eye-witnesses, or by reliable writers were also wrong as to the time of the fight; that, in fact, the ever-memorable assault had taken place, not on the morning of the 31st of December, 1775, as was generally believed, but on that of the 1st of January, 1776.

The doctor's statement, which had startled many other students of Canadian history besides myself, caused me to look up the historical sources on which my opinion was based.

In order to elucidate the subject fully I decided to consult other writers on Canadian annals, such as Rev. Abbé H. Verreault, of Montreal, and Dr. N. E. Dionne, of Quebec, both fellows of our society. I also resolved to have searches made in the archives and libraries of the United States.

As a preliminary, it occurred to me to look up the Roman Catholic parish church register of Quebec, considered so justly a reliable and accurate record of marriages, births and deaths since the foundation of the colony.

I therein read of the burial of a French Canadian, by name Louis Vallerand, on the 1st January, 1776; the said Vallerand was killed at the engagement at Quebec the day previous, viz., the 31st December, 1775.

"Le premier janvier 1776, par nous, vicaire de Québec, soussigné, a été inhumé dans le cimetière de la Sainte-Famille le corps de Louis Vallerand, tué dans l'attaque livrée le trente et un décembre, âgé de vingt-cinq ans environ. Ont été présents Pierre-André Spénard, François Sasseville et plusieurs autres.

"(Signé) LEFEBVRE, *Ptre.*"

This entry alone, as Dr. Dionne observes, suffices to overturn Dr. Kingsford's theory.

In order to abridge the array of authorities which can be put forth on the task before me I shall, with Dr. Dionne's permission, confine myself to quote the leading authorities contained in his able dissertation, in addition to my own.

The doctor, after alluding to the accounts of the banquets commemorating the repulse of Montgomery and Arnold, to be found in the columns of the old "Quebec Gazette," 1776, 1779, etc., says: "The 'Quebec Herald' of the 14th January, 1790, mentions the annual banquet as follows: 'Thursday last, being the 31st December, the Veterans held their annual dinner.'" He quotes an extract of a letter written six days after the engagement by General Wooster to Colonel Warner, both distinguished officers of the Continental army.

"With the greatest distress of mind," writes the general, "I now sit down to inform you of the event of an unfortunate attack made upon Quebec between the hours of four and six of the morning of the 31st December last."

Then comes a passage taken from the journal of an English officer present at the siege, and inserted in W. Smith's "History of Canada," as follows: "31st December, Mr. Montgomery, with 900 of the best men, attacked Près-de-Ville, and Arnold, with 700 chosen fellows, attacked at Sault-au-Matelot."

We have next the statement of an eye-witness, one who saw all that took place before, pending and after the assault of December, 1775, viz., an extract of a pastoral letter from no less a personage than the Roman Catholic bishop of Quebec, Monseigneur Briand. It is dated 29th December, 1776. This dignitary takes occasion to recall the memorable engagement, as a subject for congratulation, to his flock. "What," says his lordship, "are our feelings on the happy and glorious event of the 31st December, 1775."

Bishop Briand, a resident of Quebec, surely could not have been mistaken as to the date in alluding to such a recent occurrence!

Dr. Dionne also puts forth an important document, the text of the inscription on Richard Montgomery's tombstone at St. Paul's Church, New York, showing "31st December, 1775," as the date of his death. This inscription was prepared by Benjamin Franklin. Is it likely that such an eminent man as Dr. Franklin should have inserted this date thoughtlessly and without consulting well-informed persons on this subject?

Among United States travellers who have published books on the campaign of 1775 Dr. Dionne mentions the following: Sansom,[1] Silliman,[2] and a well-known American writer on the battles of 1775-81, Henry B. Carrington, who says: "It was not until the night of the thirtieth, when but one day of legal service remained for a large portion of the troops, that the preparations were complete;"[3] that is, that the preparations for the assault were completed only during the night of the thirtieth, when one day alone of legal service remained for the greater portion of the troops.

It was, then, indispensable not to wait for the 1st January to make the assault, as the term of service of a large portion of the soldiers expired with the end of the year. (Bancroft's "History of the United States," vol. vii, p. 121.)

Ill-clad, ill-fed, Montgomery's followers were little inclined for a winter campaign, fraught with exposure and suffering. Many longed to return to their homes.

Perault,[4] Bibaud,[5] Smith,[6] Hawkins,[7] and Garneau,[8] who wrote at the beginning of the century, and who could easily collect the traditions of the past, are unanimous in fixing to the 31st December, 1775, the attack on Quebec.

"Then," adds Dr. Dionne, "all the recent writers on this thrilling period agree in recording the assault on Quebec as taking place on the 31st December, 1775—Charles Rogers,[9] who wrote in 1856, Rev. W. H. Withrow,[10] James M. LeMoine,[11] L. P. Turcotte,[12] and Faucher de St. Maurice."

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1 "Sketches of Lower Canada, Historical and Descriptive, with the Author's Recollections, 1817," p. 631.

2 "Remarks made on a Short Tour between Hartford and Quebec in the Autumn of 1819-1820," p. 284.

3 "Battles of the American Revolution, 1775-81," p. 134.

4 "Abrégé d'Histoire du Canada, 2ème partie," p. 117.

5 "Histoire du Canada et des Canadiens sous la Domination Anglaise," p. 67.

6 "History of Canada," ii, 161.

7 "Picture of Quebec," p. 427.

8 "Histoire du Canada, 1ère édition, 1848," t. iii, p. 436.

9 "The Rise of Canada from Barbarism to Wealth and Civilization," p. 62.

10 "A Popular History of the Dominion of Canada, 1885," p. 279.

11 "I. Album de Touriste," pp. 33, 70, et suiv.

12 "Invasion du Canada et Siège de Québec, 1775-76, 1876," p. 47.

In reply to a communication I addressed to a literary friend across the border, Mr. Edward Denham, of New Bedford, Massachusetts, drawing his attention to Dr. Kingsford's error, I received a voluminous memoir, disclosing considerable research through the United States libraries and archives.

With his permission, I herewith subjoin the leading authorities set forth:

"Colonel Donald Campbell to General Wooster, dated Holland House (near Quebec), Saturday, December 31, 1775:

'DEAR SIR,—It is with the greatest distress of mind that I have the task of communicating to you the event of an important attempt that was made to storm the town of Quebec between the hours of two and seven this morning, by four different attacks. * * * *

'Thus you have had the four attacks that were concerted between our dear deceased General Montgomery and Colonel Arnold, which was for many respects hurried from the circumstance of the enlistment of the troops under Colonel Arnold, whose service expires this day.'

"Here we have December 31, but the day is called Saturday, which should have been Sunday. Here we also have the information that the attack was hurried, because the term for which the troops enlisted had nearly expired, which I have also seen elsewhere.

"The Journal of Captain Simeon Thayer, from September 11, 1775, to August 12, 1776, published in the 'Collections of the Rhode Island Historical Society,' vol. vi, Providence, 1867, pp, 2 to 5, says:

'December 30.—The enemy kept up a smart fire all day on St. Roques, but done little or no damage. This evening received orders that the General determined to storm the city this night, ordering our men to get their arms in readiness. It was very dark and snowed. The plan was as follows.' * * *

"The 'Historical Magazine, second series,' vol. vi, October, 1869, p. 249, contains an extract of a letter from Adam Bainfair, master of the 'Fell' transport ship, to his owner in Whitby, dated Quebec, May 15, 1776:

'We have got the troubles of this winter over, and have kept the town of Quebec in spite of our enemies. * * * Before this comes to hand you will hear of our town been attacked on the 31st December, when I had the honour to command at that part where the grand attack was made, and had the fortune of killing the General and his Aid-de-Camp by the first guns I fired, which was a great means of saving the garrison.' * * *

"This letter is taken from the 'Middlesex Journal,' London, June 22, 1776, and is in the 'Historical Magazine,' as mentioned above.

"On the day before the attack Major John MacPherson wrote a letter to his father, stating that the order was given to storm the city that night. His brother held a commission in the British army, and he refers to him in the letter. He also directed that his letter should be sent to his

parents if he did not survive the assault, and as he did not, it was forwarded by General Philip Schuyler. The letter is dated and reads:

'HEADQUARTERS BEFORE QUEBEC, December 30, 1775.

'MY DEAR FATHER,—If you receive this, it will be the last this hand will ever write you. Orders are given for a general storm of Quebec this night, and heaven only knows what may be my fate. * * * Should Providence, in its wisdom, call me from rendering the little assistance I might to my country, I could wish my brother did not continue in the service of her enemies.'

"This letter, copied from the 'Philadelphia Press,' October 30, 1860, will be found in full in the 'Historical Magazine,' second series, vol. viii, July, 1870, p. 53.

"In the two preceding extracts we have a letter from Bainfair (Barnesfair), who participated in the fight on the British side, and a letter from MacPherson, who was killed. The former distinctly gives December 31st as the date of the battle. The latter, writing on the 30th, says orders are given 'to storm Quebec this evening." That points to the 31st as the day of the battle as plainly as possible.

"Turning to those who kept diaries or journals, I take up that which I find in the 'Publications of the New York Historical Society' for the year 1880. It is entitled, 'Journal of the Most Remarkable Occurrences in Quebec from the 24th of November, 1775, to the 7th of May, 1776. By One of the Garrison.' The author of the journal I do not know, but will quote part of one day and part of another.

'December 30.— * * * In the night a deserter came in from the rebels. He reports that the army under Mr. Montgomery amounts to between two and three thousand men, including Canadians; that they have been newly clothed. and are most plentifully supplied by the country people, who are paid in hard money. * * * The whole army was assembled at headquarters, by the General's order, lately. It was given out that they were to attack the town that night. * * *

'December 31.—About four o'clock this morning Captain Malcolm Fraser, of Colonel Maclean's Regiment, in going his rounds, perceived signals not far from St. John's Gate; and finding the weather such as the enemy wished for, by the last deserter's report, he alarmed the guards and picquets, who stood to their arms. All the sentries between Cape Diamond and Palace Gate saw many and repeated flashes like lightning. On the Heights of Abraham lights like lanthorns were placed on poles at regular distances.' * * *

"The above gives December 31st, tells that the deserter gave them information that the city was to be attacked, and the kind of weather Montgomery desired he had.

"I next turn to the 'Journal of Return J. Meigs from September 9, 1775, to January 1, 1776,' as it is given in the 'Collections of the Massachusetts Historical Society,' second series, vol. ii, pp. 227-247, and find:

'December 31.—The troops assembled at two o'clock this morning. Those that were to make the attack by way of Cape Diamond assembled at the General's quarters upon the Heights of Abraham, and were headed by General Montgomery.'

"Next we turn to the 'Journal of Joseph Ware, of Needham, Mass., published in the 'New England Historical and Genealogical Register,' April, 1852, p. 132.

'Sunday, December 30 and 31.—It began to thicken up towards night and snowed very much. We were ordered to be in readiness, and at two o'clock at night we were mustered and got all fit for scaling the walls, and marched near to the city, some with ladders, some with axes and some with saws; General Montgomery, with his forces, on the one quarter, and Colonel Arnold on the other hand.'

"Now here the diarist speaks of the night of December 30-31, and tells us that he was called out at two o'clock, which was the morning of the 31st, and later mentions what happens. At five began the attack, and later, the retreat.

"William H. Whitmore, in the 'American Genealogist,' Albany, 1878, p. 74, says this journal of Ware's is claimed in the 'Book of the Looker' to have been written by Ebenezer Tolman, who was in the expedition. Whitmore also refers to an earlier edition of his 'American Genealogist,' 1868, pages 84-5, for further information about this Tolman's claims. I have not the book, so I cannot look up the facts. However, whoever wrote the book, December 31st is the date named for the fight.

"The 'Journal of Captain John Dearborn,' edited by Camberlain, and published in the 'Proceedings of the Massachusetts Historical Society' for April, 1886, pp. 275-305, says:

'December 31.—This morning at four o'clock I was informed by one of my men that there was orders from the General for making the attack upon Quebec this morning. I was surprised that I had not been informed or notified sooner; but afterwards found it was owing to the neglect of the Sergeant-Major, who excused himself by saying he could not get across the river. * * * The General gave orders last evening for the troops to assemble at two o'clock this morning to make the attack in the following manner.' * * *

"General Wooster to Colonel Warren, in a letter dated Montreal, January 6, 1776:

'With the greatest distress of mind, I now sit down to write of the event of an unfortunate attack made on Quebec between the hours of four and six on the morning of the 31st of December,' etc.

"The above is taken from Force's 'American Archives,' 4th series, vol. iv, p. 588. It is also in 'Documents Relating to the Colonial History of New York,' edited by O'Callaghan, vol. viii, 664.

"General John Sullivan says, in a letter to the Assembly of New Hampshire, dated Winter Hill, January 18, 1776:

'It is with the most sensible pain I sit down to write you the melancholy tidings of our army being defeated at Quebec on the 31st of December, with the loss of one hundred and fifty.'

"Taken from Peter Force's 'American Archives,' 4th series, vol. iv, p. 768.

"General Schuyler, in a letter to the President of Congress, dated Albany, January 13, 1776, six o'clock:

'Within this half hour Mr. Antill arrived with the unfortunate account in the inclosed. My amiable and gallant friend General Montgomery is no more; he fell in an unsuccessful attack on Quebec on the 30th ultimo.'

"Peter Force, 'American Archives,' iv, p. 666.

"From the 'Journal of Colonel Rodolphus Ritzema, of the First New York Regiment, August 8th, 1775, to July 30th, 1778' (from the original in the 'Collection of the New York Historical Society,' published in the 'Magazine of American History,' vol. i, February, 1877, pp. 98-107). The author is at Montreal at the time he writes:

'January 3, 1776.—Mr. Antill arrived here by express from Quebec, with intelligence that General Montgomery, on the 31st ultimo, between the hours of six and seven in the morning (after a previous disposition of his small army), made two attacks upon the lower town, under a feint, and upon the upper.' * * * *

"In the series of Force's 'Archives,' vol. ix, p. 707, in a letter which appeared in the 'New York Gazette'; the author of the letter I do not know, as it is signed with pseudonym 'A Soldier,' who wrote from Montreal:

'As the public have no doubt received many contradictory accounts relative to the unfortunate attempt against Quebec, on the 31st of December last, * * * I have sent you for publication the following sketch.'

"James Melvin, an actor in the assault on Quebec, and taken prisoner at Sault-au-Matelot, on 31st December, 1775, writes ('Melvin's Journal,' p. 11):

'31st December, Sunday.—About four in the morning we mustered in order to storm the town.

'1st January, 1776.—Prisoner in Quebec.'

"'The Account of the Repulse our Troops met with in their attempt at Quebec, the 31st of December, 1775.' This report is dated January 24, and says:

'The letters from Canada bring an account of an unsuccessful attempt made to gain possession of Quebec by storm on the 31st December last, between the hours of two and seven in the morning.'

"In a letter which Governor Tryon wrote to the Earl of Dartmouth, dated 'Ship Dutchess of Gordon, off New York, 8th February, 1776':

'I am happy to have an opportunity to communicate to your Lordship the victory obtained by General Carleton over the rebel forces before Quebec on the 31st of December last, in which action the commander was slain.'

"'Documents Relating to the Colonial History of New York,' edited by O'Callaghan, vol. viii, p. 672.

"The reply to this is given by Lord Germain in a letter to Governor Tryon, dated Whitehall, 28th March, 1776:

'The severe check the rebels met with on the 31st December before the walls of Quebec, of which fortunate event we received the first intelligence from you, has, I trust, secured to his Majesty the possession of that fortress,' etc.

"From 'Documents Relating to the Colonial History of New York,' edited by O'Callaghan, vol. viii, p. 672.

"'The Annual Register' for 1776, vol. xix, chap. i, p. 13, says:

'* * * However that was, early in the morning, on the last day of the year 1775, and under cover of a violent snow-storm, he proceeded to his arduous attempt.'

"I have already referred to William Smith's oration, in which is the date December 31, 1775, and which was published at least twice, separately. I have never seen either of the original editions, but it is given in full in Peter Force, iv, pp. 1675-1684. The monument erected in New York, at the rear of St. Paul's Chapel, gives the date of his death as December 31, 1775. The inscription upon it is given in Lorring's 'Field-Book,' vol. i, p. 201, and blunders in regard to his age, which it says is '37.' As he was born December 3, 1736, he had just completed his 39th year."

Such are some of the authorities in support of the generally accepted date of the attack on Quebec in December, 1775, by the troops of Congress—the date put forth by the eminent historian, George Bancroft, in his "History of the United States of America," vol. vii, p. 131.

Let us see the documents on which Dr. W. Kingsford rests his theory in volume vi, page 33, of his "History of Canada." Quoting Finlay's "Journal," the doctor wrote:

"31st December.—Wind N.E., very stormy and dark. As Captain Malcolm Fraser, of the Emigrants, who that night commanded the main guard," etc.

"Caldwell writes: 'They (the Congress troops) remained until the 31st December. About five o'clock in the morning we were alarmed at our picket by Captain Fraser, who was captain of the main guard," etc.

"Mr. James Thompson, who, as engineer, carried on the work of increasing the fortifications, and lived to be 98, dying on the 30th August, 1830, describes two assaults on the night of the 31st of December, 1775, or rather the morning of the 1st January, as the time when Arnold approached Palace Gate" (p. 113).

"Badeaux (Verrault, p. 182) gives the same date. 'Enfin, ne trouvant aucun moyen pour entrer dans la ville, il forma l'escalade le premier jour de l'année 1776, à quatre heures du matin."

"The error," Dr. Kingsford adds, "apparently has arisen from Sanguinet having described the event as taking place '*le trente et un de décembre 1775, à cinq heures du matin.*' Sanguinet was, however, at the time at Montreal, and whatever the expression may mean, he cannot be accepted as an authority for what took place during the siege."

Let us now sift the foregoing evidence adduced by Dr. Kingsford.

Finlay's testimony seems to us anything but conclusive as favouring Dr. Kingsford's assumption, especially when read in conjunction with the statement of Colonel Caldwell, which immediately follows it, and which mentions five o'clock in the morning of the 31st December as the hour when Captain Fraser gave the alarm.

Old Sergeant James Thompson, stonemason and "overseer of the works," as foreman, not as engineer, and who lived to be 98, dying on

the 30th August, 1830, who left a diary which he dictated to his son, James Thompson, Jr., on the 31st July, 1828, two years before his death, can scarcely be accepted as a sufficient authority ; the memory of nonagenarians attaining 96 years being liable to become faulty. This supposition becomes a certainty on referring to another passage in his diary, dictated also on the 31st July, 1828, wherein it is said that "on the 31st December, before daylight, General Montgomery made an attempt at assault by Près-de-Ville and Sault-au-Matelot," etc., "where he and two of his officers and a sergeant were shot dead by a single discharge," etc.

Guy Carleton, commander-in-chief, in a letter to General Howe, Quebec, 12th January, 1776, relates the attack as being made on the 31st December, 1775.

The evidence of Henry, a volunteer in the troops of Congress, taken prisoner on the 31st December, 1775, quoted by Kingsford, is open to suspicion, as his presumed diary or memoir, instead of being in his handwriting, was dictated to his daughter thirty-seven years later, viz., in 1812, as appears by the following: "The campaign against Quebec was "dictated to his daughter Ann Mary, the mother of the writer, with the "aid of casual notes and memoranda, from his (Henry's) bed of sick-"ness—his latest years. The manuscript received no revision at his "hands, for he was called away shortly after the pages were written. "His widow gave it to the press in 1812, and it was printed without "even a correction of verbal or typographical errors." ("Account of Arnold's Campaign against Quebec," published by Maunsell, Albany, 1817.)

Sanguinet, a member of the Montreal Bar, who left what has ever been held a copious and reliable journal of the siege operations of 1775, and who places the assault on the morning of the 31st December, visited Quebec in May, 1776, when the particulars of the attack were fresh in everyone's mind. According to Dr. Kingsford he cannot be accepted as an authority for what took place during the siege, on account of his absence!

The doctor, however, accepts the version of the journal attributed to Badeaux, a Three Rivers notary, though Badeaux no more than Sanguinet was present at Quebec on the day of the engagement. The doctor, however, in Badeaux's case forgot, or did not choose to add, that on the margin of Badeaux's manuscript, in Badeaux's own handwriting, occurs the correction "31 décembre, 1775," and that the learned Jacques Viger, the antiquary, who owned Badeaux's manuscript journal, inscribed under the correction the words "Et c'est vrai. (J. V.)," his initials.

Another work highly prized for its historic value, Hawkins' "Picture of Quebec," published in 1834, with the joint collaboration of the scholarly Dr. John Charlton Fisher, of the learned Andrew Stuart, Q.C., and the late Judge Adam Tom, fixes the date of Montgomery and Arnold's assault on Quebec on the 31st December, 1775.

In 1834 these eminent men had special facilities to inform themselves of the date, as they had numbered among their contemporaries eye-witnesses of the battle, such as Sergeant J. Thompson and others.

Taking into consideration the array of authorities available to the analyst of that period, it seems to me a matter of regret that such an industrious writer as Dr. Kingsford could not find the time to extend the field of his researches, and should have taken on himself, on the slender evidence he adduces, to alter the date of the assault on Quebec in 1775, as given by Bancroft and other reliable historians.

NOTE.—Since the above was written, historical works of undoubted merit otherwise have been published with Dr. Kingsford's erroneous date as to Montgomery and Arnold's assault on Quebec in 1775. There can be no doubt that the enemy, mustering at their respective headquarters very late on the night of the 30th December, were marching on the slumbering city at early dawn and before on the 31st of December, 1775.

VII.—*The Line of Demarcation of Pope Alexander VI. in A. D. 1493 and that of the Treaty of Tordesillas in A.D. 1494; with an inquiry concerning the Metrology of Ancient and Mediæval Times.*

By SAMUEL EDWARD DAWSON, Litt. D. (Laval).

(Read May 26, 1899.)

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1.—Introduction.

While during the last five years scholars in the north have been discussing the voyages of the Cabots; in the south, an acrimonious controversy was carried on by politicians concerning the coasts of Venezuela and Guiana, the scenes of the discoveries of Columbus, Hojeda and Pinzon. The question has now been settled, but it would seem that civilization has not gained as much, during the last four hundred years, as might have been expected, inasmuch as political recklessness nearly resulted in bringing on a war between the United States and Great Britain. Patient statesmanship averted that crime and the controversy was at last referred to a tribunal of arbitration and a great calamity to civilization was prevented.

The diplomatic documents cited in support of the claim of Venezuela go back to the very earliest years of the discovery of the New World. With the direct question of the boundary between Venezuela and British Guiana, now happily settled, the present paper is not concerned; but indirect questions were raised, interesting to every student of early American history, and therefore, of early Canadian history, for the history of Canada strikes its roots as deep down into the centuries as does the history of any part of the continent. Before Columbus touched the mainland near the *Boca de la Sierpe*, Cabot had coasted the shores of Newfoundland and Nova Scotia.

The main object of this paper is to elucidate the line of demarcation drawn in 1493 between the Old World and the New by Pope Alexander VI. and its modification by treaty the following year. Not much has been written upon this subject in English. There is a very excellent article by Prof. Edward G. Bourne in the *Report of the American Historical Association* for 1891, and a recent volume by Mr. Henry Harrisse (*Diplomatic History of America*, London, 1897), full of research, as all his books are; but beyond these the student must have recourse to other languages than English if he should seek information of value concerning what has been called, somewhat hastily, that "absurd act of assumption." We shall find, on closer inquiry, that we have no right to a patent for the idea of an international tribunal of arbitration. There was one in permanent session in 1493; and, by its decision, war was then averted between the two foremost nations in Christendom. We shall see, moreover, that although the ownership of half the world was involved war was not then so imminent as it was

recently between England and the United States; not because of anything in dispute between them, but on account of a petty territory claimed by a third government, and in assertion of a speculative proposition in international law of recent invention and doubtful authorship.

The case for Venezuela was based primarily on the Bull of Pope Alexander and upon discovery. Without entering into the controversy it may be observed, that the argument proves too much; for the whole of the present United States fell within the Spanish demarcation and, from where Cabot's voyage ended, the whole coast of the Atlantic was first discovered, and ceremonial possession was taken, for Spain. The British take their title in Guiana from the Dutch, and the United States take their title from the British; so that it is not easy to build an argument on discovery and upon the Bull of 1493 without involving some considerable portions of the United States.

While these questions may however be considered as settled it will interest the student to recall the fact that, in these northern seas, the line of demarcation was supposed to cut our coast and that Nova Scotia and Newfoundland fell to Portugal. This has been incidentally referred to in previous papers; but, inasmuch as the papal Bulls of 1493 and the Treaty of Tordesillas of 1494 are within the scope of our history, it is not lost labour to inquire what these documents were and what was their meaning.

Nothing is more trite than to insist upon the importance of treating each period of history from its own point of view; but nothing is more difficult. In recent controversies on early American history it has been often forgotten that Western Europe was Roman Catholic when America was discovered, and that, although the secular head of the Holy Roman Empire had lost his relative importance, the authority of its spiritual head was still unchallenged. Latin was, in effect, a living language—the living language of the services of the Church and a living language for all educated men throughout Europe. The Romance languages themselves had not diverged so widely as now, either from each other or from their common source; and the barriers of nationality were not raised nearly so high then as they are at the present day. Those who gibbet Sebastian Cabot as a scoundrel and traitor for changing his service, forget that the great sailors of his day changed masters without reproach and that soldiers and statesmen frequently did the same. No one blames Philippe de Comines, who was born a Burgundian subject and served in the council of Charles the Bold, for passing over into equally confidential and important employments

under his mortal enemy, Louis XI. of France; but Cabot, an Italian, born in Venice, is judged as if he had been a captain in the French navy who had sought employment from the Emperor of Germany. This is a misleading anachronism, for the present exaggerated antagonism of nationalities is of comparatively recent growth and received its chief impetus in the religious wars which followed in the sixteenth century.

The same tendency to anachronism has affected the interpretation of the old charts. If the early sailors had possessed sufficient knowledge they would have made more accurate maps; but they had neither the information nor the instruments necessary, therefore the secret of longitude was hidden from them. All their longitudinal distances were calculated by dead reckoning; and the log line, even, was not in use until 1521, but their maps are now often measured in millimetres as if they were the products of an admiralty survey. Elaborate arguments have been founded upon the trend of their coast lines, without considering that their maps were drawn to compass bearings, and ours are always drawn to the true meridian. The conditions of the age in which they lived made it possible for the sailors of all the western nations to calculate their distances by a uniform customary league; but that league was not the admiralty league of three minutes of the Equator nor the English land league of three statute miles.

The present paper then, although it may have been suggested by the Venezuelan controversy, will not discuss the boundary of British Guiana. Its object is to throw light upon our own history by a detailed examination of the Bulls of Pope Alexander VI. and the pretensions based upon them. The distances specified in the Bull and in the treaty lead to a discussion of the nautical measures of length in use at that time and the Portuguese names still clinging to our coasts bear witness to the belief that the line of demarcation cut the northeastern coast of America, somewhere in the present province of Nova Scotia. All these subjects are of interest, since they bear upon the true interpretation of the early maps and the elucidation of the historical geography of our Atlantic coast.

II.—International Law in 1493.

It has been stated by writers of great weight that Grotius laid the foundation of international law as it is now understood. This means that, in the application of the principles of international law, references seldom go further back than to the exhaustive work of Grotius, published at Paris in 1625. It does not mean that international law did

not exist before Grotius, or that he originated its principles. The most cursory glance at his great work, *De Jure Belli*, will show that all his illustrations were drawn from Greek, Roman and Jewish history, and it will be found, on perusal, that his principles are derived from natural law or the law of nature as laid down by the Roman lawyers, upon the Roman civil law as found in the *Corpus Juris*, upon the works of the more philosophical of the Christian Fathers, upon the Synodical Canons recorded in ecclesiastical history and upon the Divine law as revealed in the Bible. Grotius does not, himself, pretend to anything else. He was born in 1583, ninety years after the discovery of America, and to attempt therefore, to pass judgment on the Bull of 1493 in the light of our present notions, is an absurd anachronism. Grotius goes further, and, while justly claiming the merit of his work, refers to authors who had preceded him who, as he says, were "partly Divines and partly Doctors of Law." If, therefore, we put aside the conventional law or treaty law of nations, it will be seen that modern international law is founded on the Roman law and on the Canon law, which latter was carried over all Europe by the Roman Church ; for even in England up to the time of Edward III. the Lord Chancellor was always an ecclesiastic. In commenting on this point, Sir Henry Maine observes[1] that "it "is astonishing how small a proportion the additions made to inter- "national law since Grotius's day bear to the ingredients which have "been simply taken from the most ancient stratum of the Roman "*Jus Gentium*." This *Jus Gentium* is the law of nature applicable to all human beings, and therefore to nations collectively, and is eloquently said by Cicero[2] to be "That law which was neither a thing con- "trived by the genius of man, nor established by any decree of the "people ; but a certain eternal principle, which governs the entire "universe, wisely commanding what is right and prohibiting what is "wrong. . . . Therefore, the true and supreme law, whose commands and "prohibitions are equally authoritative, is the right reason of the "Sovereign Jupiter."

These things being so, it is somewhat flippant for the *London Times* to characterize the citation of the Bull of 1493, in the Venezuela dispute, as "comical" or "absurd." It was good law *pro tanto*, for where else was there, at that time, a court so competent, by learning or tradition, to decide questions which, in their essence, depended on the Roman or Canon law as the Court of Rome ? Nor could there, *a priori*, be conceived one more likely to be impartial ; for the Pope had no sailors through whom he could discover and claim for himself new lands. Flings at the private character of Alexander VI. are only pretexts for avoiding argument. We have to do with him in this paper

only as a geographer and as judge in a court in a secular matter; nor have we even to discuss his authority; because he was, at least in this case, a court of consensual jurisdiction. The popes could see, as Grotius afterwards saw, "such license of going to war as even barbarous "nations may be ashamed of, that men take arms greedily for light "causes, or none at all." No one at that time impugned their authority, and why should they have recused themselves from an office, or shirked a duty, so clearly incumbent on them in their quality as head of the Christian commonwealth?

The conception was, indeed, lofty and most Christian. The heart of every earnest thinker must go forth in sympathy to the man who, in the isolation of an autocratic throne, has, in these latter days, dreamed such a dream as the institution of a court of supreme international appeal. Such a position the popes did in fact occupy at the period of the discovery of America and, as is pointed out by Bryce,[3] "they were excellently fitted for it, by the respect which the sacredness "of their office commanded; by their control of the tremendous "weapons of excommunication and interdict; above all by their ex-"emption from those narrowing influences of place, or blood or personal "interest which it would be their chiefest duty to resist in others." For reasons beyond the scope of our argument this was soon to cease; but in A.D. 1493, Christendom was still conceived to be an organized body of Christian states, of which the Pope was the spiritual head. There was, therefore, an innate fitness in the lawyers and doctors of the civil and canon law at the *Curia Romana* to deal with broad questions of natural and divine law or universal justice extending over independent nations. The proceedings at Rome were, in matters of international interest, not arbitrary but formal and technical; for there were resident representatives there of all the powers of Christendom. During the period of their power the popes had often helped the weak against the strong and had often strenuously laboured for that "truce of God," which, even in present times, can alone avert the impending Armageddon. We learn from Sir Henry Maine[4] that Bentham was so impressed with the confusion attending the modern views of right to territories by discovery and occupancy, that he went out of his way to eulogize this very Bull of Pope Alexander; and Maine himself adds that, although praises of any act of papal authority may seem grotesque in a writer like Bentham, "it may be doubted, whether the arrangement "of Pope Alexander is absurder in principle than the rule of public "law which gave half a continent to the monarch whose servants had "fulfilled the conditions required by Roman jurisprudence for the ac-

"quisition of property in a valuable object which could be covered by "the hand."

Modern diplomacy is not in a position to regard as "comical" or "ridiculous" the attempt of the Pope, in 1493, to draw a line of demarcation through the ocean in the interests of peace between the only powers which were then concerning themselves with discovery and extension, for, translated into the very latest diplomatic form of speech, it was nothing else than the delimitation of "spheres of influence," such as, during the last few years, have resulted in the partition of the continent of Africa. The doctrine of "Hinterland," is the old principle under a new name. It is the principle which pervaded the old charters of the American colonies and made them to extend their claims from sea to sea. As it was then, so it is now; enormous regions are being marked off upon the map, regions whither white travellers have barely penetrated and containing immense numbers of people who have never seen a European. These are being allotted to one power or another, without any more rational grounds then were the Western or Eastern Indies in 1493; and from time to time a Fashoda incident crops up to demonstrate the absence of any governing principle.

It has been argued that the perfect equality of each sovereign state, without regard to its size or strength, is a modern principle of international law. That however is doubtful, for it seems in the case of weak nations to depend rather upon the mutual jealousies of the greater states. Grotius although, as before stated, he mentioned in his preface the names of some of his predecessors in the field of international law, did not mention Francis a Victoria, a learned theologian of Salamanca, who in two chapters of his work, *Relectiones Theologicæ*, published first at Lyons in 1559, and then at Salamanca in 1565, went far beyond Grotius and even surpassed the writers of the present day in his humane and liberal views. The book is very rare, but Hallam (Hist. Lit. Vol. 2) gives an account of it and there is a more detailed analysis in Salomon's *L'Occupation des Territoires sans Maitre.* The chapters bearing on the present question are those entitled *de Indis* and *de Jure Belli*, and the fact that such views were at that date publicly expressed by an ecclesiastical professor of high repute, is worthy of serious attention. He maintained that the Spaniards had no more right to the Indies by discovery than the Indians would have had to Spain if they had discovered Spain—that, by public and private law, the Indians were as justly owners of their own lands as if they were Christians—that the Indians did not lose their rights because they were unbelievers, since they had not had the opportunity of knowing the true faith—that Jews and Saracens who were hostile to Christianity retained their

lands and that nominal Christian princes did so also, though their morals were often not so good as those of the Indians, and moreover, that God bestowed his gifts, as he made his sun to rise and his rain to fall, upon the evil and the good. Proceeding with relentless logic, the learned professor demonstrated that the Pope could have no possible right over the lands of these people, since the dominion of Christ himself was spiritual, and, if they were heathen, then still less would be the power of the Pope over them; for they would not even be subject to his spiritual authority and that no just war could be waged against them on that account. These views, as to the power of the Pope in matters purely temporal, held as they were in the great Spanish university of Salamanca, will be referred to later on; but at present it must be observed that he still made out to justify the Bull of Pope Alexander, but by two arguments so modern and "up to date," that they might emanate from a Mission Board at New York, or a board of directors at London. If, he argues, these Indians allow the missionaries freely to preach the gospel and meet their efforts only by indifference, they stand in their right; but if they resist with violence or persecute the neophytes, there will be a just cause of war. That is the argument for the Mission Boards, but the other is no less happy. Every Christian nation, he argued, has an absolute right of commerce with every other Christian nation and to sail its ships along their coasts; that right exists therefore towards every pagan nation as well, and, if resisted, there is also a just cause of war. Now we can see the right of the British ships to open the ports of China and the American ships the ports of Japan; but the learned professor of three centuries ago is still in advance of us, for we evade his conclusions by coasting laws and prohibitive tariffs. If the Chinese and Japanese had admitted our ships under similar laws one would like to call back the shade of this most excellent ecclesiastic and ask his opinion, whether a prohibitive tariff was not a prohibitive law.

The reference of such territorial questions to the Pope was moreover rational; since geographical knowledge was nowhere cultivated with so much curiosity and intelligence as at Rome, because of the universality of the claims of the Roman See. The Canon law required the attendance of bishops, at definite intervals, at the Court of Rome, and they were bound to make certain reports through their metropolitans. By these channels the Popes became, on geographical matters, the best informed men in Europe.

Upon this subject there has been a great deal of *ad captandum* writing; for, while it is quite true that current opinion in the middle ages upon geography was crude and absurd, it is also true that the

doctrine of the sphericity of the earth, as taught by the Greek geographers, was held by the greater minds within the Church and never authoritatively rebuked. Herein is the essential unfairness of books like President Andrew D. White's *Warfare of Science*. He holds the Roman Church responsible for the sputterings of Cosmas Indicopleustes. But that irritable religionist was not a churchman by training, and, although in late life he became a monk in Egypt, he was a merchant, a traveller and a sailor for the greater part of his life—he was never a priest. His travels were extensive and his observations upon what he actually saw were valuable; but his *Christian Topography* was written in Greek, in the time of Justinian. To make the Roman Church responsible for his extravagances is not fair disputation. The belief in the sphericity of the earth was by no means general in Greek and Roman times. The Epicureans laughed at it as a vagary of Pythagoras, and those who, in all ages, are called "common-sense people," did not believe it any more than Cosmas,—though they might have been pagans. In Chapter VII. of Plutarch's treatise, *On the Apparent Face in the Moon's Orb*, the theory is ridiculed by one of the speakers. No doubt in the middle ages, as in ancient times, the belief was common that the world was flat; but it was not a doctrine of the church. The passage so often cited from St. Augustine[5] merely states that even "if it be supposed or "scientifically demonstrated that the world is of a round and spherical "form, it does not *logically* follow that the other side of the world is "peopled, seeing that nobody has been there to see and that it may be "all water or, if indeed land, may be bare of inhabitants." The logic is unanswerable and the general opinion was that there were no antipodes; though Columbus, than whom there never was a more fervent Catholic, held to the contrary. There were two systems current. One held, with Pomponius Mela to the notion of a southern hemisphere separated from ours by an ocean impassable from heat, and the other held with Ptolemy, the belief in a southern continent extending from Africa to Eastern Asia and inclosing the Indian Ocean. During the dissolution and re-crystallization of society there was very little opportunity to think about science and, for the masses, the times were indeed dark; but, and the exception is fatal to President White's thesis, such science as there was existed in the cloister alone; and that of necessity was the case, for there, in those turbulent days, was the sole refuge for a quiet thinker and in the church was the only career for a man of great intellect but of humble birth; because the highest position in it was not limited by class or race or family. Thus it came about that the church attained such power and that with the exception of our own Alfred, laymen left so slight a record in the world of letters.

There was nothing to prevent them becoming scholars had they been so inclined. Albert the Great, Bishop of Bollstadt, lectured publicly at Cologne, and recorded in his writings his belief in the existence of antipodes. So did Friar Bacon and, from his writings, Cardinal d'Ailly adopted similar opinions. The *Imago Mundi* of d'Ailly was the abiding solace of Columbus in his passionate struggles and it was also the chief source of his cosmological knowledge; since from it, chiefly, he gathered his knowledge of the theories and conclusions of the Greek and Arabian geographers. It is not true that the theories of Columbus were antagonized especially by churchmen. On the contrary, the Dominican monks at Salamanca were in advance of the lay professors in their scientific views. Those who mainly assisted Columbus to obtain access to the Catholic sovereigns were Fray Juan Perez (Franciscan) Prior of La Rabida, Fray Hernando Talavera (Dominican) Prior of Prado and Confessor to the Queen, Fray Diego Deza, Professor of Theology at Salamanca, and Cardinal de Mendoza, who was a minister of the Crown. It was not the scholars nor the churchmen, *qua* churchmen, who opposed Columbus; but the "clear headed practical common sense folk," of all classes; supported by the men, and they are not all dead yet, who have an infallible gift for finding their own notions in the Scriptures. Writing in 1498, from St. Domingo to the King and Queen, Columbus expresses his gratitude; "all others," he writes, "who had thought of the matter, or heard it spoken of, unani-"mously treated it with contempt, with the exception of two friars, "who always remained constant in their belief in its practicability."

It is no part of the object of this paper to discuss the beliefs and dogmas of the church; but it is due to geographical science to say that it is simply untrue that Pope Alexander, as President White asserts, (*Warfare of Science*, Appleton, 1876, p. 19) laid down "a line of de-"marcation upon the earth as upon a flat disk," and it will be seen, as we proceed, that it is also untrue that "this was hailed as an exercise "of divinely illuminated power in the church" (p. 20). Globes were not in the least uncommon then. The year Columbus sailed, Martin Behaim made a large globe still to be seen at Nuremburg. Long before that (in 1474) Columbus had sent a globe to Toscanelli at Florence, and we read of a globe before 1497 upon which John Cabot taught his son the properties of the sphere. It may readily be supposed that all the globes then in existence are not spoken of in the books. It is not necessary to think, moreover, with Mr. Harrisse[6] that the Pope was probably basing his partition upon a plane chart, when he sent the Bull to the Spanish monarchs. It was quite unnecessary, because the line was clearly enough indicated—north and south, from pole to pole, one

hundred leagues from the Azores or other Portuguese islands. The new discovery of necessity destroyed the value of all previous charts and it was not in the least necessary that the Pope, or his lawyers, should waste any portion of the very short time spent in preparing the Bull in measuring off a hundred leagues upon a chart of any kind. As for President White's "flat disk," the very words of the Bull, "from the "Arctic pole to the Antarctic pole," preclude the notion.

Again the popes were, in geographical questions, of necessity in advance of their age; for, during the thirteenth and fourteenth centuries, they had been sending envoys—simple monks for the most part—to the far east to the Tartar emperors, who had broken down the barriers of Mohammedan exclusiveness, and in that way their knowledge of the world had been greatly extended. Moreover, they favoured geographical study. The first translation of Ptolemy into Latin, in 1409, was dedicated to Pope Alexander V. Pope Nicholas V. commanded the first translation of Strabo, and the first printed edition was dedicated to Pope Paul II. In 1478, the first complete edition of Ptolemy was published and it was printed at Rome and dedicated to Pope Sixtus IV. Æneas Sylvius, afterwards Pope Pius II., wrote a work on cosmography and a copy still exists with annotations on the margin in the admiral's own handwriting. The *Decades* of Peter Martyr are mostly letters to popes to keep them informed of the discoveries being made by Spanish and Portuguese sailors. For these and many other reasons a question of cosmography could, at that time, be decided better at Rome than anywhere else.

Whatever be their form, the true nature of these Bulls is an award and not a donation; for they are all drawn subject to a right by discovery. The respective "spheres of influence" of Spain and Portugal were delimited; but the grant to Spain is made "upon condition that "no other Christian king or prince has actual possession of the islands "and mainlands found or that shall be found" before the Christmas last past. Nor need the learned President take exception to the words, "of our own free will and certain knowledge and in the plenitude of "our apostolic power." There are similar words in all documents of that nature by others than popes, for instance, in the patent and ratification of privileges to Columbus (April 23, 1497), after stating in the preamble that the power of the sovereigns is derived from "God alone, "whose place they supply in temporal affairs," the grant reads "of our "own proper motion, certain knowledge and royal absolute power." The wording is nearly identical and so is the material form; for it is a lay Bull, "sealed with a *leaden seal hanging by threads of coloured silk.*" The principle is the same in the wording of such documents even now.

The authority is usually referred to and in a republic would read—in virtue of the authority committed to me by the people, etc., etc. It is merely the substitution of the will of the majority for Divine Providence.

In despite of the form of donation it will appear that, even in those days, the title went by discovery. The reason of the request for the special Bull is shown later on, and we learn from Herrera that, when asking for it, the Catholic sovereigns did not compromise their prerogative; but stated that "most learned scholars in Spain thought "that the application for a grant of territory already in their possession "was unnecessary." No other decision was open to the Pope, seeing that Spain gave clear proof of discovery and of possession taken. These circumstances are recited in the Bull. In those days, title by discovery required a formal taking possession in the name of the sovereign with ceremonies, frequently of a religious character, as well as by unfurling and saluting a flag. There has been very little change in succeeding years. As the European nations began to overflow and unoccupied regions were seized, the extent of territory covered by a settlement grew narrower, but the presently existing doctrine of "effectual occupation" was not formulated until the conference at Berlin, in 1884, when Germany waked up to the fact that the world had been almost occupied while she had been busy in consolidating her national unity. There is not so much "presumption" in the Bull as in the charter of Henry VII. to Cabot three years later. He granted power to "saile to all parts, "countreys, and seas of the East, of the West and of the North, to "seeke out, discover and finde whatsoever isles, regions, etc., of the "heathen and infidels whatsoever they be and in what part of the "worlde soever they be." Then Henry gives the grantees power to "subdue, occupy and possess all such townes, cities, castles and isles of "them found, which they are to occupy and possess as our vassals, etc., "giving unto us the rule, title and jurisdiction of the same villages, "townes, etc., and firme land so found," and in the same lofty style Henry disposes of the regions to be discovered as if they were his property or his by right of his Crown. An unprejudiced comparison will compel the admission that Pope Alexander was the less "arrogant and presumptuous" of the two; for he at least assigned a defensible reason; namely, the conversion of the infidels and the carrying of the gospel into all lands. This, in fact, it was his proper function to see to; for he was at the head of the only mission board then in existence. For centuries after it was not thought that a non-Christian people were capable of sovereignty and proprietorship. Indeed, the question is hardly settled yet in the case of pagan nations. I am not discussing the principle; I am simply asserting that it still survives, and that in

the light of many occurrences in the Pacific and in eastern seas, it might be well to examine our own consciences without dissembling before throwing stones at Pope Alexander on this account.

While arguing for the validity of the Bull of 1493 the Venezuelan counsel have greatly overstated the submissiveness of the English monarchs of those days and the historical instances of Mr. Harrisse, whose *Diplomatic History of America* seems to have been prepared for the case, have led them into error. While it is true that the Bull *Laudabiliter* is authentic, it is necessary to read it in its own terms, when it will appear, as Dr. Lingard[7] long ago observed, that the Pope "Adrian, by this instrument, avoids the usual language of feudal "grants; he merely signifies his acquiescence in the king's project; "he is willing that Henry should enter Ireland and *be acknowledged as "Lord by the natives.*" The submission of Henry cited as having occurred at Avranches is not accepted as historical by English authorities; but even if the circumstance actually occurred, as stated, the agreement is admitted to have been a private one by those who assert that it was made. Being then, at the utmost, secret and made without the consent of the barons, whatever binding effect it might have upon Henry himself, it was invalid as against the realm of England.

An intimate knowledge of the laws and ceremonial language of Spain has probably prevented Senor Rafaal Seijas from incorporating Mr. Harrisse's sixth chapter in the "case." He could not take so seriously the oration of filial allegiance and submission in which the envoys of Ferdinand and Isabella, on an errand of congratulation to the newly elected Pope, "lay at the feet of His Holiness, all they possess on "earth and on the seas; not only their kingdoms, treasures, fleets and "armies, but also their sons and royal persons." This must be taken to mean only obedience in spiritual matters. Mr. Harrisse's ideas of the relations between the temporal and spiritual powers would have shocked every lawyer and statesman in Spain and nine-tenths of the clergy also.

It would lead me from my theme to discuss a subject so vast in its literature and so important. I shall, however, enable the reader to form, for himself, an opinion as to the extent of the submission in strictly temporal matters of the monarchs of those days by letting them speak for themselves. The following is an extract from a letter by William I., who had just conquered England, to Pope Gregory VII.—the great Hildebrand of Canossa memory—and William had received a consecrated banner for his expedition from Gregory's predecessor.

"To Gregory, the most excellent Pastor of the Holy Church, William, by "the grace of God, King of England and Duke of Normandy, sends health and "friendship.

"Your legate, Hubert, religious father, has admonished me on your part to "do homage to you and your successors, and to think better of the money which "my predecessors were accustomed to send to the Roman Church. Of these "demands, one I have granted; the other I have refused. Homage I would not "nor will I do. For I did not promise it myself; nor can I learn that it was ever "done by my predecessors to yours," etc., etc.

Then he promises to send the usual money.

The next letter is from the barons of England to Pope Boniface VIII., (the writer of the "Unam Sanctam,") who had declared that Scotland was a fief of the Holy See and had summoned Edward I. to desist from invasion and plead the matter in the Roman Court.

"To the most holy father in Christ, the Lord Boniface, by divine Providence, "chief bishop of the Holy Roman Church, John, Earl of Warren, and one hun-"dred and five other barons, send greeting.

"It is well known to us and to many others, most holy father, that the "kingdom of Scotland never did, nor does, by any right whatever, belong, in "temporals, to the Roman Church. Nor have the Kings of England, on account "of the independent pre-eminence of their royal dignity, and a custom at all "times inviolably observed, ever pleaded, or been bound to plead, with respect to "their right to the kingdom aforesaid, or to their other temporal rights, before "any ecclesiastical or secular judge whatsoever," etc., etc.

The barons then go on to say that even if the king were disposed to plead they would not permit him to do so; as it would be to "the "manifest disherison of the rights of the Crown of England and sub-"version of the laws, charters and customs inherited from their "fathers."

In the face of these two letters the argument as to the submission of the English kings based by the Venezuelan counsel on Mr. Harrisse's book falls to the ground. One more letter, and this, from the very King Ferdinand the Catholic, who sent the embassy of obedience to which Mr. Harrisse devotes a chapter, will suffice to show the difference between obedience in temporal and in spiritual matters. Ferdinand was King of Naples, as well as of Aragon, and the Pope had served upon his vice-roy at Naples, a Brief without sending it first to be examined and receive the royal *placet* before publication; according to the fundamental laws of these kingdoms. The King writes to his vice-roy and after reciting the circumstances, he continues:

"All this has not a little excited our anger and indignation; and we are "equally surprised at and displeased with you; that, considering the importance "of the case and the prejudice which our royal dignity suffered from the act of "the apostolical messenger, which is a violence against all right, never practised "against any king or viceroy of my kingdom," etc., etc.

Then, after expressing his indignation that the Pope's messenger had not been instantly hanged, the King goes on to show how the act might be cancelled, as follows:—

"You must also use all possible diligence to seize the messenger who pre-
"sented the said Brief; if you can get hold of him, he must retract the presenta-
"tion which he made you of the Brief, and renounce it by a formal act; after
"which you will have him immediately hanged," etc., etc.

These letters cover the period of the greatest height of papal power, and it is strange that a Venezuelan statesman familiar with the fundamental law of Spain, could have fallen into such an error. Mr. Harrisse has evidently not turned his attention to this branch of history for he wrote in 1892 in his *Discovery of America* (p. 54). "Nay, whenever a new pope was elected all the Christian kings had "again to do homage for their possessions, old and recent." It is a surprising statement. Claims were in past ages sometimes made by popes and extremists, whom Dante (*De Monarchia*) calls "decretalists," but no such general claims as these extending to all kingdoms were made and, beyond doubt, no such acts of homage were ever performed.

Although the remarks immediately preceding may seem to lead away from the main subject, they do not in reality. It is necessary to clear away these misconceptions concerning the early documents of our history. The Venezuelan dispute was not settled by the Bull or by the principle of discovery; but by the occurrences of the Dutch occupation. In 1875, the dispute between Spain and Germany for the Caroline islands was referred to Pope Leo XIII., and he decided for Spain; but he did not go upon the title by discovery, nor did he even allude to the Bull of his predecessor. He based his award upon repeated acts of occupation by Spain down to the very moment the dispute arose. In 1493, circumstances were very different, and while we must take exception to such statements as the preceding, concerning the submission of European princes generally, or English princes specially, in temporals to the Roman See, we must concede to the Pontiffs a position as international judges if upon no higher ground than upon the ground of consensual jurisdiction.

III.—The Outward Form.

Before proceeding to consider the papal Bulls bearing on this question, it is necessary to dwell for a moment upon the outward form of these documents; because, in Protestant countries, vague notions often prevail concerning them and also because, in his *Diplomatic History,* Mr. Harrisse has treated these American Bulls so incautiously as to throw new stumbling blocks in the way of a student of American history.

The official decisions of the popes were for the most part set forth in two forms of equal authority—Bulls and Briefs—and this was the

case whether the subject were a dogmatic deliverance upon a matter of faith, a direction on a question of discipline, the creation or modification of an institution, or a decision in a secular matter as in the present case. It is inaccurate to call these American Bulls "privileges "issued in the particular form of the small Bulls, called by the ponti- "fical chancery *tituli* or gracious acts."[8] This is to confuse things essentially different. A *privilege* in canon law is, by its very name, a private or particular law, according a favour to some person or institution; as, for instance, to a monastery or church "*Dicitur lex,* "*non*[9] *quia privilegium est lex, sed quia quamdiu durat instar legis* "*observari debet; dicitur privata quia non facit jus quoad omnes.*" A *titulus* is something still different, and is a presentation or right to a benefice or a church. A privilege or title might, indeed, be in the form of a Bull; but whether the Bull was a small one or not, would depend upon the bulk of the subject matter, and, on the other hand, a small Bull might be of exceeding importance. The Bulls referred to in this question are public laws; international decisions involving an inchoate right to half the world. They cannot be called "privileges," still less "titles;" and to call them "small Bulls" in any sense is an error, as the reader will see on reference to them in the appendix. A still greater confusion is caused by Mr. Harrisse's explanation of the word *litterae.* He says,[10] in relation to the Bulls described later as A and B, "The pontifical privileges were often accompanied by a second "*littera,* shorter than the first, and of which it was, in fact, the noti- "fication," and again referring to the Bull *Eximiae,* he says, [11] "This "*littera* was not exactly an abridgement of the primary Bull, resemb- "ling, for instance, the abstracts of testaments, grants, bills of sale, "or conveyances which our recorders deliver constantly." This is very misleading, for the word *littera* is general and covers all written communications. Nor is it correct to say that the "pontifical chan- "cery drafted anew important Bulls in condensed form, which were "transcribed in full in its registers, and were legalized not simply as "true copies but as authentic originals."[12] That would be equivalent to a legislature passing two acts covering the same subject, a long and a short one, and making both original and authentic. Moreover, there could be no "papal Bulls for common use"[13] "carried round on maritime "expeditions" to be shown while both the larger and "condensed orig- "inals" were retained in the archives. This very singular error seems to have been suggested by a clause in the Bull *Eximiae* as follows:

"But forasmuch as it would be very difficult for the present letters to be car- "ried to all such places as may be expedient, we will," etc., etc., "that to copies "of these presents, signed by a public notary, employed for that purpose and

"provided with the seal of some person endowed with ecclesiastical dignity, or "with that of an ecclesiastical court, the same unquestioned faith shall be given, "in a court of justice, or without, or anywhere else, as to these presents if they "were shown or exhibited."

This clause is customary in Bulls or Briefs which are intended for wide circulation and will be found also in *Inter cetera*. It is so common that in some *Bullaria*, the first words alone are given *"Verum tamen difficile foret, etc., etc.,"* with a note on the margin to the effect that "faith is to be given to copies." A clause almost in the same words occurs at the end of the encyclical of the present pope concerning the Jubilee which appeared in the newspapers a few months ago.

These two forms of expressing the decision of a pope vary in outward appearance. A Brief commences with an abridged formula. The name of the Pope is prefixed and the words, *"ad perpetuam rei memoriam;"* then it continues on with the main subject matter. It is written on paper, in a modern style of handwriting, dated according to the modern calendar and sealed in red wax with the "fisherman's ring."

A Bull, although it possesses no greater authority, is more formal in its salutation and more solemn; as will be seen on reference to appendix A. *"Alexander, episcopus, servus servorum Dei, etc., etc."* It is written on parchment and (until recently) was in an antique style of characters. It is dated according to the old Roman calendar; but the essential note is that the seal is of lead (it might be of gold) stamped on one side with the effigies of SS. Peter and Paul and, on the other, with the name of the reigning pope. The seal is attached by strings of various significant colours. There are other points of difference, but the above are the most striking.

It is of the essence of a law of any kind, and before all others of these pontifical laws which bind the conscience, that they shall be published or promulgated. A secret law is not a law in any sense of the word. Until it is promulgated it does not exist as a law and binds no one. It will be seen later how this fundamental principle has been entirely overlooked, and this is the more surprising, inasmuch as, by the laws of all Catholic countries in those days, every Bull, Brief or public letter of the popes had to be presented to certain royal officers and receive the royal *placet* or *exsequatur* before being published or even communicated to any other person whomsoever. The extract given on page 480 from a letter to his vice-roy by King Ferdinand the Catholic, will set this matter in a very clear light. In that way monarchs guarded their prerogatives; for a Bull not promulgated in a country did not bind there. To get over this difficulty it was maintained by some

canonists that a Bull was sufficiently promulgated by being affixed to the gates of the Vatican and proclaimed in the piazza of the[14] Campo di Fiori at Rome. This was said to be publication *in urbe et orbi*. That was disputed by others; but, without wandering into a disputed question, it may confidently be affirmed that a Bull unpublished and unknown to the persons whom it was intended to bind wanted that essential quality which brought it into life and force.

Now, while a Bull was in this inchoate state, it might be entered on the secret register of the Vatican and might be complete in form; but, before promulgation, it was still open to modification. It might be found on final examination that the instrument was not drawn in precise accordance with the will or instructions of the Pope; or some omission or error might be pointed out by the person who had petitioned for it. In such a case (and it is not at all an uncommon one) a new Bull would be drafted and it also would be entered at its proper date upon the register, while the first would never appear. This, as will be shown, was what occurred in 1493, and recent researches having, after three hundred and fifty years, unearthed the first draft, a controversy has arisen most perplexing to students.

These documents, Bulls or Briefs, are known, and always cited by the first words after the salutation. The present paper is chiefly concerned with two—the *Eximiae devotionis*, dated May 3, and the *Inter cetera* dated May 4—both of 1493. It will at once be seen therefore that it is paradoxical to write of two Bulls *Inter cetera* as issued on two successive days of the same year covering the same subject matter. It is like quoting two statutes on the same subject, of the same chapter, of the same regnal year, identical in their wording, save in two or three sentences. One of the chief objects of this paper is to clear up this apparent difficulty. It has been brought forward very prominently of late and magnified rather than explained.

IV.—The Demarcation of 1493.

On May 4, 1493, Pope Alexander VI. promulgated the Bull, known from its first words as *Inter cetera*, in which he delimited, by a line drawn from pole to pole, what would now be called the "spheres "of influence" of Spain and Portugal. The Bull was sent to Spain by a special messenger. It was received by the Catholic sovereigns and acted upon. A copy was despatched to Columbus, then preparing for his second voyage, and another to Fray Buil, who was going with him to superintend the missions. It became the subject of innumerable discussions. Copies were made at the time and authenticated by ecclesi-

astical authority; the original was deposited in the archives of the Indies at Seville where it remained until within very recent years; it has been printed in all the *Bullaria;* referred to and cited in all the books. For three hundred years, no suspicion of any other *Inter cetera* arose in the minds of the numberless officials, annalists and historians, who administered American affairs or wrote on American subjects.

In the year 1797, Juan Baptista Munoz, who had been entrusted by the King of Spain with the task of writing a history of the New World, and to whom the archives of the kingdom had, for the first time, been thrown open, found, at Simancas, a document in the form of a Bull commencing with the same words *Inter cetera,* but dated May 3, (*quinto nonas Maii*) the day before the historic Bull, which bore date *quarto nonas Maii.* The two documents were, for the greater part of their contents, in identically the same words. In appendix A is printed the full text of the historic Bull of May 4, and all the words which are not in the Simancas document are printed in italics. On the other hand, all the words in the Simancas draft which were omitted in the Bull as promulgated are given in the footnotes, with references to the places from whence they were dropped. The reader has, therefore, practically both Bulls before him.

The discovery of the Simancas document gave rise to much speculation. Humboldt gave[15] a partial collation of the two Bulls and expressed surprise without offering an explanation. Washington Irving referred to both and did not attempt to reconcile them, but he gave the dates, erroneously, as May 2 and May 3 respectively. Munoz quoted the historical Bull containing the line, but he gave May 3 as the date. In his paper in the *American Historical Report,* Prof. Bourne gives a partial collation of the two, and Mr. Harrisse in his *Diplomatic History* has brought the difficulty into strong light, and has moreover increased it by treating the unpromulgated Bull as the primary one and as a valid and efficacious document. He calls it a "privilege," and says, "apparently within the twenty-four hours" after its publication, Alexander published the other. One of the chief objects of this paper is to show that the Simancas Bull, having never been published, never had the breath of legal life and also, by comparing the two documents, to explain the duplication by internal evidence.

The Bulls which Mr. Harrisse in his *Diplomatic History* brings under review, are four in number; he has lettered three of them as follows, for ready reference:

A. *Inter cetera* of May 3—the Simancas, unpublished Bull.

B. *Eximiae devotionis* of May 3.

C. *Inter cetera* of May 4—the promulgated Bull of demarcation—the historic Bull.

And the fourth may be lettered D.

It is a Bull known only in a Spanish translation made sixty years after its supposed date and entitled *Extension de la concesion y donacion Apostolica de las Indias.*

These four documents, if all thrown together, are conflicting, but a careful examination will eliminate A as an unpromulgated document which never had a valid and legal existence, and show that D does not affect the argument, in the first place, because no original copy has ever been found or proved to have existed, and second, because, even if it were a valid document, it adds nothing to the real Bull, being only an explication of what had already been enacted. There will then remain B and C, and these will be found, not only to harmonize, but to supplement each other and to form, when taken together, a logically consistent whole, such as the expert lawyers of the *Curia Romana* would not be ashamed of.

While it may be held by extremists, in opposition to the great majority of canonists, and the unanimous opinion of civil lawyers, that a Bull, when affixed to the gate of the Vatican and proclaimed on the piazza of the Campo di Fiori, was sufficiently promulgated to bind the consciences of all Catholics, no one has yet ventured to assert that a Bull never published at all, at Rome or anywhere else, had any efficacy whatever. One well known instance there used to be of a Bull being published annually in that way at Rome, because it was not admitted to publication elsewhere in Europe; but that was a very exceptional case which proves the rule and the arguments from it have no validity here, for this was a decision, not on dogma or discipline, but in a boundary question, which Spain had applied for and, of necessity, it had to be notified to the parties concerned who were fitting out expeditions and extending discoveries into all seas. In this case, local publication was of the very essence of the matter; but the Simancas document lay unknown and unsuspected for three hundred years until Munoz found it in 1797. It does not in the least validate the document to say that when the present pope opened the archives of the Vatican, both Bulls were found on the secret register of Alexander VI. There was, no doubt, an intention to issue that dated May 3, but the entry of the next day cancelled it and that without mention, because the first draft was never uttered. In fact the very thing the Catholic sovereigns had asked for, to wit, the line of demarcation, had been entirely lost sight of and, therefore, the instrument was of necessity drafted anew. The subject matter of the petition was then inserted and matter duplicated

in another Bull was omitted. The case is not parallel to that of the preparation of dogmatic Bulls, but is parallel rather to a copy of the judgment of some high civil court in which errors may be found on examination before publication and the Spanish envoy on looking into the first document could easily see that what his master had specially asked for was not there.

With regard to the *Eximiae devotionis* (Mr. Harrisse's B) he is undoubtedly right in taking it to be a real Bull; but it is misleading to call it a "privilege," and it is a *littera* in no other sense than other written communications are *litterae*. The historians he refers to (without mentioning their names) who take the Bull to be "a simple invoice sent "with Bulls A and C, when they were sent to Spain," must have wandered from some shipping business into the regions of history and canon law. Mr. Harrisse explains that it was not like an "invoice" or an abstract of a "grant" or "testament" or "bill of sale" or "conveyance." It was not "exactly an abridgment of the primary Bull;" it might, he thinks, be called "a papal Bull for common use." It certainly was very far from being any one of these things. It was simply a deliverance of the Roman court in the usual form of a Bull and, as will appear on reading it in appendix B, it had a clear and distinct meaning, and the sentence in it "*prout in nostris inde confectis litteris plenius continetur*," refers to the line of demarcation intended to be in Bull A but omitted. When the Bull was redrawn, the next day, as Bull C the clause omitted was inserted, for that missing clause of demarcation was the essential motive of the whole transaction. The Roman chancery was as Mr. Harrisse observes evidently hurried beyond its usual leisurely pace.

The date of this Bull (B) is May 3—the same date as that of the unpublished Bull. It is not met with in the ordinary books, and has therefore, been given in appendix B. Mr. Harrisse has given it in an English version. In appendix A of this paper is, as has been said, a copy of Bull C—the historic Bull. If the reader will omit all the words in italics and read into it all the words in the footnotes, in their places as marked, he will reconstruct the text of the rejected draft. He will see that the draughtsman erred in two directions, first, by making mention of the rights of Portugal which were to form, and did form the subject matter of a separate Bull (B) and, second, by omitting the judgment of the Pope delimiting the territories of the two crowns. The re-drafting of the Bull made the correction in both directions; for upon a careful comparison, it will appear that the matter dropped from the first draft (Bull A) which is all shown in the footnotes in appendix A, refers solely to the rights of Portugal and is nothing else than what is given in Bull B *Eximiae devotionis;* while the italicised

passages contain the inserted matter which was in effect the cardinal point of the whole movement. The two documents A and B, in fact overlap; while the two documents B and C are supplementary and form a logical and consistent whole. The Bull C distinguishes the respective spheres of action of the two crowns, and the Bull B gathers up all the rights, which in previous Bulls had been conceded to Portugal in its sphere, and by one enactment without detailed recital, confers them upon Spain to be enjoyed solely in her own then definitely assigned sphere. In that way the two powers would be kept from coming into collision and the whole mass of prior legislation for Portugal, which extended over fifty years and was very voluminous, was enacted for Spain in a few sentences—by a device very common in drawing up legislation. This, Mr. Harrisse has not observed for he says, "apparently within the twenty-four hours which followed the publication "of the two Bulls, Alexander VI., May 4, published a third—Bull C," and then he proceeds to call it the second *Inter cetera*. This is underrating the Roman Chancery. Such blundering would not have passed in a village municipality; for it was issuing two enactments of the same title and mainly in the same language within twenty-four hours. This Bull C is the only Bull of demarcation recorded in all the *Bullaria*, referred to in innumerable documents and the theme of numerous writers for three hundred years while what Mr. Harrisse calls the "primary Bull" mouldered unknown in the archives of Simancas.

In continuation of his remarks upon this Bull C, Mr. Harrisse says, "We know by the *Codex Diplomaticus* that there was attached to "that Bull a leaden seal fastened with silk strings, red and saffron "colour." Beyond doubt, for these as has been shown, are the marks of a genuine Bull and, in a Bull of grace, the seal is always attached with strings of coloured silk. Following the *Codex* further, we find that Peter Garcia, Bishop of Barcelona, on July 19, 1493, testified that he "had held, handled, seen and diligently examined these apostolic "letters of our most Holy Father and Lord in Christ, Alexander VI., "by Divine Providence Pope, from which hung his true Bull of lead "with threads of silk of a red and saffron colour, according to the style "of the Roman court, sound and entire in their marks, not vitiated, "nor erased, nor in any part suspicious, but free from any doubt what-"ever." Then he proceeds to give a copy of the Bull (as in appendix A). It was then at Barcelona and the Bishop had an official copy made and verified in the presence of certain named ecclesiastics and especially of an apostolic notary who was secretary of the Bishop of Seville. This copy was again collated with the original at Seville on Dec. 30, 1502, in the presence of witnesses. The whole is certified to by a

notary apostolic with formalities unnecessary to repeat. There can, therefore, be no doubt as to which document is the "primary Bull."

If the Bulls B and C are considered together it will be seen that no injustice was done to Portugal. The very mention of her rights *en bloc* in the *Eximiae devotionis* and the grant of the same rights to Spain in a different sphere confirmed them. Nothing was awarded to Spain, but what she had discovered and what she might discover beyond a certain line. The monarchs were not misled by the formal phrases which scandalize modern writers as being "arrogant and presumptuous." The decision is in the form of an absolute gift "We of our own motion, "and not at your solicitation, nor upon petition presented in your name," when every one knew that the Bull was issued at the request of Spain. In like manner in 1732, King George II. granted the charter of Georgia to his petitioners, "of our special grace, certain knowledge, "and mere motion," while the territory granted had been discovered and was disputed by Spain. What the Pope really did was to confirm each power in what it actually had and to allot "spheres of influence" in which they might pursue their discoveries without quarrelling—precisely as an international congress might do at the present day. No more account was taken of the Caribs and Indians than is taken now of Africans, Philippinos, Chinese or Hawaiians. Of course, they get the blessings of religion and civilization; but those also were promised in the Bulls and, in short, in view of recent movements towards a court of international arbitration, the whole proceeding has a modern air—there is as much fundamental justice in one case as in the other.

Finally there is a fourth document (see appendix C) which we have lettered D. Mr. Harrisse states that it is "known at present only in a "Spanish translation made Aug. 30, 1554, by one Gracian, doubtless "Diego Gracian de Aldrete, then secretary of Philip II. for foreign "languages." It is given in Navarrete as *Bula de la extension de la concesion y donacion apostolica de las Indias.* There is, indeed, a Latin version in Solorzano, but Mr. Harrisse is doubtless correct in supposing it to be a translation from the Spanish, necessary in a treatise written in Latin. The most careful researches at Simancas, Seville and at Rome, have failed to find any trace of an original of the Bull. Notwithstanding the frequency of forgeries of apostolical letters, said by Mr. Harrisse to have existed in the time of Alexander VI., he thinks that there was a valid original Bull. The letter cited by him does not bear on the point. It was written by the Catholic sovereigns from Barcelona, Sept. 5, to Columbus, then at Seville, preparing to start on his second voyage. They wrote to ask his opinion on certain statements made and say that, if they are true, the Bull (of May 4) should be

amended. But the Bull D bears date Sept. 25, and twenty days is too short a time to cover the transmission of a letter twice over the extreme length of Spain and an application to Rome and the issue of a Bull based upon it. Munoz, Herrera, Humboldt and other authorities of weight incidently notice this Bull without objecting to its authenticity, although they had only the Spanish translation, and Mr. Harrisse is well supported in his belief, not only by their authority, but by internal evidence; for this Bull D is in effect nothing but such an interpretation or explication of the *Inter cetera* as would likely have resulted from the persistency of the extravagant claims of Portugal. There is nothing in it to suggest occasion for forgery.

Without raising the question of the existence of an original Bull, we venture to think that Mr. Harrisse attaches to it a meaning which it will not bear; because, if it had been intended to cancel any of the rights granted to Portugal in previous Bulls, that aspect would not have failed to come to the surface in the negotiations which resulted in the treaty of Tordesillas the following year, and, if Mr. Harrisse's contention be right, it would have won the case for Spain without argument at the Junta of Badajoz, but although the proceedings have been preserved in great detail, this Bull was not alluded to. The Roman court could not, without cause assigned, revoke a decision in a secular matter made to a great Catholic power. No injustice was in fact done or attempted to be done to Portugal, but Portugal was not allowed to strain the meaning of the grants made to her so as to appropriate the discoveries just made by Columbus for Spain. These discoveries were supposed by all to be in the "Indies." The West and East Indies had not then been separated in thought or name, nor was an intervening continent then supposed to exist. The Portuguese claimed that their Bulls covered the Indies, because their grant was "ad Indos," but they had not then reached India by sea, though they had turned the Cape of Good Hope. The Spaniards had found some part, no one knew what, of the Indies, and the Bull maintained them in their possession. In reading these old charters one must incessantly guard against the ambiguity of the word East, because the American continent being non-existent in their thoughts, they constantly spoke of reaching the East on a westward course.

This Bull D, now under review, is supposed to bear date Sept. 25, 1493. It commenced by saying that certain concessions had only a short time before been made to Spain, referring to the Bulls B and C, and then it confirmed them in all their clauses as fully as if recited word by word—the line of demarcation, therefore, was confirmed in the most absolute manner. It stated that the grant had been made for

lands to the west and south and continued to the following effect (and here is the point of contention)—that since it may happen that, in sailing to the west and south, the Spanish sailors may discover land in eastern parts and lands which may belong to India, the Bulls of grant (B and C) are extended in all their clauses to cover such lands, whether they are or seem to be in the western, southern or eastern parts or in India. Then followed a *non obstantur* clause, evidently aimed at the excessive claims of Portugal, not revoking the Portuguese Bulls, but quashing the strained meaning put into them. The document then stated that, as by chance at some time or other, persons may have navigated these seas, nothing but actual and real previous possession was to avail in setting a bar to Spain in extending her discoveries on a western course. This principle of right by actual possession was adopted in the treaty of Tordesillas, and the reader will find in appendix D, Jaime Ferrer's opinion given to the Spanish monarchs that the Spanish demarcation might reach westwards round the world to the Arabian gulf, "*if our* "*ships go there first.*"

This view of the *Bula de la extension* is the one held by Navarrete. It is expressed as follows by Munoz, "to remove every doubt with re-"gard to those countries of the Indies to which the King of Portugal "might lay claim by virtue of former Bulls, the Holy Father declared "on the 26th of the following month of September, that all countries "of the Eastern Indies which the Spaniards might find in case they "were not already in Christian hands, should be included in the grant "made to the Catholic sovereigns." The principle laid down by the Pope was, as between the two powers, eminently just; for Portugal was claiming by virtue of her Bulls, lands which none of her sailors had ever seen. The Pope swept away these pretensions and made his grant to follow discovery and possession. He drew no line in the East, and therefore the papal partition of the world is, as will be shown more fully—a popular myth. The reader will find this *Bula de la extension* in appendix C. It is given in the Latin version of Solorzano *De Indiarum Jure*, Madrid, 1629.

V.—The First Line of Demarcation.

It was the opinion of Columbus and certainly, in 1493, no other opinion upon the subject was of equal weight, that on sailing westwards across a meridian about one hundred leagues west of the Azores, he had entered the New World, and he recorded in his journal that at that point the needles of all his compasses had crossed over from easterly variation to one point west of north. We cannot, at this day, realize

the profound impression then made on the minds of that small company, alone on an unknown ocean where no keel had ever before sailed, when the compass, their sole hope for retracing their course, began, as they thought, to fail them. Curiosity and wonder filled the mind of the admiral and consternation the hearts of the men at crossing the threshold of a mysterious region where hidden and unknown forces commenced to operate. In a letter to the Catholic sovereigns, written in 1498, the admiral set forth his views as follows :—

"When I sailed from Spain to the Indies, I found that as soon as "I had passed a hundred leagues westward of the Azores, there was a "very great change in the sky and the stars, in the temperature of the "air and in the water of the sea ; and I have been very diligent in ob-"serving these things. I remarked that from north to south, in travers-"ing these hundred leagues from the said islands, the needle of the com-"pass which hitherto had turned to the northeast, turned a full quarter "of the wind to the northwest, and this took place from the time we "reached that line."

He then went on to describe the Sargasso sea and other remarkable appearances which, under the tension of his first voyage, made an indelible impression upon his mind. Whether, in the light of our present knowledge, his views were correct or not, is beside the question. He held them to the last day of his life and we must take account of them.

With this fixed opinion Columbus returned from his first voyage and, driven by stress of weather into the Tagus, he went, in response to an invitation he dared not disobey, to visit the King of Portugal whom he found full of chagrin at the success of the expedition, as indeed he well might be, for, as every one then thought, the Indies, which in fifty years of continuous effort the Portuguese had not reached, by the south and east around Africa, had been reached on a course almost directly to the west. In that interview Columbus learned that the King intended to lay claim to the whole of the supposed Indies and adjacent seas in virtue of Bulls issued at various dates from 1443 to 1484 as well as under existing treaties between the two kingdoms. This interview took place on March 10. The news went direct to Rome, then the centre of all intelligence, and reached there on April 11, before Columbus got to Barcelona to report in person to the Spanish sovereigns. He arrived at Palos on March 15, and from thence he sent an express to their Majesties with the news. He could not have failed to warn them of the claims made by the King of Portugal under the Papal Bulls, nor could he have failed to suggest so obvious a precaution as that of obtaining, at the earliest moment, a decision of the Pope to confirm Spain in the possession of the newly discovered lands. Con-

jecture amounts to certainty that Columbus indicated the line of one hundred leagues west of the Azores as a natural and equitable boundary. There was, as pointed out by Humboldt, a reasonable motive "for seek-"ing to convert a physical into a political boundary line." He believed that lines of variation ran parallel to the meridians; for on his return from his second voyage, when the pilots, by reason of severe storms, had lost their reckoning, he thought in that way to ascertain his longitude. Mr. Harrisse is doubtless right in maintaining that Portugal had no share in fixing the line of one hundred leagues. Fernan Columbus said that his father had suggested the line and everything points that way. In the charter of privileges to the admiral the monarchs call it "the line which we have caused to be traced." The Spanish envoys were instructed to inform the Pope that the discoveries had been made without encroaching on the possessions confirmed to Portugal. In view of the existing treaty between the two crowns and the Bulls granted at the instance of Portugal the request of Spain was politic and reasonable and it was urged with promptness and vigour.

The line fixed by Alexander VI. was therefore a scientific line; based upon the very first observation ever made of magnetic variation, and to cite Humboldt[16] again, "the Pope actually rendered, without "knowing it, an essential service to nautical astronomy and the physical "science of terrestrial magnetism." By directing attention to this new fact he gave a stimulus to continued investigation. He was, therefore, abreast with the latest physical discovery of his day, and he was ahead of many, who during the Cabot discussions of the last few years, have been tracing imaginary courses over the ocean while ignoring the prime factor of terrestrial magnetism.

Upon careful reading there does not appear to be any vagueness of language in the Bull. The Pope evidently distinguished between what he knew and what he did not know. He stated the distance westward in leagues—a measure of length absolute in itself and familiar to all mariners. He did not attempt to decide the circumference of the earth or to fix the length of a degree. He and his officials had too keen a sense of logic to regulate the length of a league, which was a known and certain quantity, by the speculative length of a degree which was an unknown and uncertain quantity. He did not, moreover, attempt to fix the latitude and longitude of the Azores or Cape Verde Islands. He was content to leave them wherever they might be and to measure westwards in a definite direction with a definite measure from a definite point—to wit, the most westward of either of the two groups of islands in the Atlantic then held by right of discovery as possessions of Portugal.

Nor was there any vagueness about the decision that the regions "westwards and southwards" of a line drawn from pole to pole should belong to Spain. Those words covered, and were meant to cover, a dangerous though unreasonable pretension of the King of Portugal made known to Columbus and made manifest in subsequent disputes—namely, that everything south of Cape Bojador whether west or east, belonged to Portugal. The words "westwards and southwards" cut that notion clearly out. Moreover the line was not to pass a hundred leagues west of the Azores and Cape Verde Islands as if they were on the same meridian. The Pope did not decide that, nor did he know whether or not all the islands of those groups had been discovered. The line was to be one hundred leagues westward of any one of the islands whatsoever of those two groups. Both groups were held by the King of Portugal—a Christian prince; and a line one hundred leagues "*a qualibet insularum*," as Eden translates, "from any of the islands," would be reasonable and allow a wide margin. The distance being westwards would commence to be measured from the most western of either of the groups.

The main object of the Bull *Inter cetera* was to turn the enterprises of the two nations in opposite directions by giving each a free scope east and west of the specified line, for as has been shown, the Bulls to Portugal were not revoked but confirmed by the *Eximiae devotionis*. For if the Pope had revoked these Bulls he could not have referred to them as specifically setting forth the powers he was granting to Spain in the regions discovered by her sailors. The grants to Portugal extended "*ad Indos*," and the grant to Spain was "*versus Indiam*"—the expeditions of the former power were to be made east and south, and of the latter west and south; one would reach India on the west side and the other on the east side. The Pope did not decide any line in the remote East, that was left to be settled by the principle that lands in the possession of any Christian prince were excepted from the scope of the Bull. That point did not become practical until Magellan's expedition reached the Philippine Islands and El Cano brought home the news. Meantime, in 1493, Portugal was chiefly concerned to get more extended limits upon the Atlantic, because, for aught any one then knew, some great southern continent might exist, such as Pomponius Mela had indicated, and of that Portugal wanted to have as large a share as possible. The principle is the same as that of the line of the treaty of Tordesillas laid down in the following year (1494) which was in effect (see appendix D) that the Catholic monarchs might claim anything discovered in sailing to the East on a westward course even as far as Arabia—*if only the Spanish ships arrived there first.*

The foregoing is an attempt to read the Bull in the light of its own time. It was the last of its kind and marked the close of an era; for the great revolt against Rome was rapidly approaching and the storm was soon to break. The Bull bound Spain and Portugal, as regards each other, for they were parties to such references. As to how far it might be held by canon law to bind other nations is not necessary here to inquire. Henry VII. did not hesitate to send Cabot west of the line, and Francis I. sent Verazzano, and England and France founded claims to parts of America upon their voyages; but, however that may be, the treaty of Tordesillas in 1494, abrogated the line established by the Pope and laid down another and this last line, and not Pope Alexander's line, is the one spoken of in the books as the "line of "demarcation;" it is not the papal line at all, and although, in A.D. 1506, it was confirmed by Pope Julius II., it had been drawn by Spain and Portugal as if they alone had any concern with the matter. It will be of interest to state here that there has been found in the secret archives of the Vatican a document entitled "De Canadia et Nova "Francia," setting forth an elaborate argument that the Pope's decision did not apply to the discoveries of Verazzano, because the grant was limited by its express words to "islands and mainlands," "*per* "*nuncios et capitaneos vestros inventae*" i.e., discovered by Spanish ships. The argument is ingenious, but it is also sound and applies as well and with more force to the voyages of the Cabots. The Papal line of demarcation was a *terminus a quo*—no *terminus ad quem* was fixed. The fact of discovery was to fix the latter, for the grant to Spain would travel eastwards with every discovery until her sailors came to lands in the possession of some Christian prince. There can be no doubt upon this point if the Bulls are carefully read—the westward progress of Spain was to be limited only by the eastward progress of Portugal. Mr. Harrisse is correct in writing of the "*alleged*" partition of the globe by Pope Alexander. The globe got divided somehow in the diplomacy between Spain and Portugal. It was a lay arrangement. The Pope drew a line on the Atlantic and gave the two nations a fair start, as it were back to back. As for the far East it was only the assumption of the disappointed kings of Portugal that the popes had granted to them unknown and undiscovered lands. The Bull awarded territories, when they were discovered in certain specified directions, upon the condition that when they were discovered they were also found unoccupied by any Christian prince.

VI.—The Treaty of Tordesillas in 1494.

Up to the year 1494 the Portuguese had made no discoveries beyond the Cape of Good Hope. In seventy years of continued effort along the coast of Africa they had succeeded in reaching the turning point towards the east and south of Asia. It was not until 1497 that Vasco de Gama led the way to India by sea—up to 1494 all the discoveries had been southwards. Successive popes had, upon solicitation, confirmed these discoveries and had also adjudged to Portugal the seas and lands discovered or to be discovered from Cape Bojador southward and eastward as far as the Indies, "*usque ad Indos.*" Spain had admitted these claims by treaty in 1479, and had bound herself to refrain from interference. Portugal, in the meantime, had sent agents overland to Arabia and India who had reported upon the wealth of these regions, and was preparing with confidence to open up the eastern trade when the return of Columbus from his first voyage dissipated her dreams of monopoly; for he was supposed to have touched the eastern shore of the long coveted land of spices. It was a bitter disappointment to the King and he at once laid claim to more than the Bulls or the treaty would warrant. Columbus in the interview at Valparaiso assured King John that he had strictly followed the orders of his sovereigns and had avoided the regions conceded to Portugal, and the same statement was made at Rome when Spain applied for a Bull of confirmation. It was made with truth; for, whatever theories a few scholars may have held, no one before Columbus seriously attempted to go to the Indies by the west, and all the Bulls, as well as the treaty, had been drawn solely in contemplation of voyages by the south and east.

The objective point of both nations still lay open to further discoveries, though from opposite directions, for neither "*usque ad Indos*" or "*versus Indiam,*" carried an inclusive grant of the coveted regions to either party. As Mr. Harrisse properly points out, the Pope had not concerned himself with the other side of the world in laying down his line of demarcation; but it was, in fact, left to be decided by discovery. With commendable desire to avoid war the two nations entered into negotiation, and the first proposition of Portugal was that the line should run east and west along the parallel of latitude of the Canary Islands, and that the activities of Spain should be confined to the regions north of that line. This was to attribute to the word "southward" of the Portuguese Bulls an absolute meaning that it would not bear. An attempt was also made to strain the meaning of "*usque ad Indos,*" and make it cover the Indies whose eastern margin Columbus

was supposed to have touched. It is especially to be observed here that if the supposed *Bula de la extension y donacion* of Sept. 25, 1493, had possessed the meaning attributed to it by Mr. Harrisse and others, it would have obviated discussion ; for the regions in dispute would have been conceded to Spain. From the fact that no such Bull was alluded to in the tedious preliminary discussions, we may fairly argue that either there was no such Bull or that it had no meaning beyond that attributed to it in the previous chapter.

Three envoys from each nation met at Tordesillas, and on June 7, 1494, signed the famous treaty which during three hundred years was a subject of dispute ; first, in the East, with reference to the Moluccas, and then in the West, with reference to the boundary between Brazil and the Spanish provinces in South America. The result was that without mention of any Bulls a line of demarcation was fixed much further westwards. But it was not 270 leagues farther west, as often stated, for the line of the Pope was a hundred leagues west of the Azores, and the line of the treaty was 370 leagues west of the Cape Verde Islands, so that the six degrees of longitude between these two groups must be deducted from the apparent additional extension. The treaty was confirmed twelve years later by Pope Julius II., on January 24, 1506. Then the treaty line was legally substituted for the line of Alexander VI.; though, in fact, no other line than the treaty line has been found on any map ; even on those made as early as 1501-2. It will therefore be seen that the division of the world into two parts was a development of the treaty of Tordesillas, and that this "arrogant pre-"sumption"—the cause of so much indignant writing—is not properly laid to the charge of Pope Alexander.

Much of the literature on this subject would lead the general reader to suppose that the Bulls of concession to Spain and Portugal were a mass of pretentious and contradictory documents issued from time to time on no settled plan. On the contrary they will be found consistent with each other throughout the series, and from the first to the last, the principle of a primary right by discovery is a key to their true interpretation. They are sometimes diffuse as are the legal documents of other courts on account of the technicalities with which they are drawn. It is misleading to associate with them the least notion of infallibility, as if they touched upon any question of faith or morals. They were in fact decisions of a court of appeal. Every one of them was issued upon a petition by one power or the other—there were only two nations then engaged in discovery—and the rights of both were considered with care. The last of the series, that of Leo X., Nov. 3, 1514, in reaffirming all the grants to Portugal, did not imply that these

rights had been abrogated. The change in the location of the line had been homologated by Julius II. and that remained as established by the treaty. It has remained, as appears in the first part of this paper, to be cited in the Venezuelan argument, and Mr. Bourne is in error in supposing that it was abrogated by the Bull of Leo X. and the right by discovery substituted then. The right by discovery and occupation is an inheritance from the Roman civil law and existed all the while. It was the real law running under all the Bulls. The form of donation was transitory and superficial.

The line of the treaty was an arbitrary line, based on no attempt at a rational or scientific principle. It was a mere compromise and it is worthy of remark that Columbus, in the deed of entail made at Seville (Feb. 21, 1498), as well as in his last will, ignored the treaty and cited the line of the Bull in its own terms. There was a stipulation in the treaty that within ten months a joint-expedition should measure off these leagues of western extension, from the Cape Verde Islands to the dividing line, and if land were found the line was to be marked by a tower or pyramid. That expedition never sailed. The coast of America was soon recognized as a bar to the Eastern Indies and the Portuguese pressed on their discoveries and conquests to the farthest East, relieved from the apprehension of interference from Spain.

The return of El Cano, Magellan's lieutenant, in 1521, by way of the Cape of Good Hope, again awakened the Portuguese from their dreams of monopoly and showed them that their success in shifting the line westwards on the Atlantic was likely to lose them the Spice Islands (Moluccas) in the Pacific. How the idea of continuing the line round the globe first arose does not clearly appear. It was not in the Bull nor is it expressly in the treaty; but in the negotiations which arose immediately upon the return of El Cano, it was taken for granted by all as if it existed by necessary implication in both documents while in fact no *terminus ad quem* can be found in either.

Collisions between the Spanish and Portuguese in the far East began to grow sharp and threatened to bring on war when a convention, known as the "Junta of Badajoz," assembled at that city on April 11, 1524, to decide upon the partition of the world between the two powers, for no others were considered in the matter. Sebastian Cabot was there as an expert pilot for Spain. He could have told them, and perhaps did tell them, that the flag of England had been already planted on the coast of the western continent. If he did tell them of Baccallaos, no record remains of it. Fernan Columbus was there also, and El Cano and Stephen Gomez, and Nuno Garcia, and Diego Ribeiro,

all as naval assessors for Spain. Portugal also sent pilots, amongst them some who had sailed in the East. It will be necessary to revert again to this convention ; the point to be noticed here is that the pilots and sailors and astronomers were assessors to give professional information and that there were really two separate processes or inquiries. One related to the location of the line of demarcation, the other to the facts of prior possession or discovery. The Moluccas were the chief subject of dispute and while the Spaniards claimed that they had discovered them, without sailing over Portuguese waters, the Portuguese insisted that they had been there first. It is, therefore, evident that the doctrine of right by discovery was strongly held by both sides. The argumentation is very modern in its method. The Emperor insisted that, even if Portugal had discovered the islands (which he denied), that it would not give a title without possession taken, and that no one could truly say that he had found anything which he had not taken possession of. This is the precise statement of law in the British case against Venezuela (p. 150), "that it is not the finding of a thing but the taking "by the finder that gives the title," so that here we have the Emperor Charles V. anticipating Grotius by a hundred years, and Bluntschli and the British foreign office by four hundred years, in a most important doctrine of international law ; and the Emperor went on to appeal to the principles of "general law and natural reason." We may, therefore, see that the only new principle in this branch of international law is a definition of "possession" in a stricter sense, made as late as 1888 at Berlin. The Badajoz Junta was without result. The Portuguese would do nothing but assert that the islands were theirs and call upon Spain to give them up first and then try to prove the contrary, while the Spaniards maintained that they had the islands by possession, but would give them up if Portugal would establish her right by an action under the stipulations of the treaty.

In 1680, disputes arose about the treaty line on the other side of the world—on the River Plate in South America—and another convention met, with no better result. The matter was settled in 1750, not by reason or law, but in consequence of a marriage between the two royal houses.

It remains now to observe that the only rational line drawn on the ocean was that drawn by Pope Alexander VI., and that his line was almost immediately superseded by another, decided upon by the only two nations seriously occupied at that period in making discoveries. The new line was drawn without reference to the Pope and although during the past four hundred years the papal line of demarcation has been the theme of much indignant writing, the Spaniards and Portuguese were

all that time disputing about another line—one of their own making. Last of all when, in 1885, the present Pope arbitrated upon the dispute concerning the Caroline islands, situated near the western edge of the grant supposed to have been made by his predecessors, he made not the least reference to that, but decided consistently with his predecessors according to the underlying principle of law.

VII.—The Point of Departure.

The commissioners at Tordesillas made no improvement on the Bull of Pope Alexander in point of clearness; for their distance of three hundred and seventy leagues was made to commence from the Cape Verde Islands generally, and that group extends over three degrees of longitude. These islands are distant about 320 miles from Cape Verde in Africa. They are barren and when discovered by the Portuguese in A.D. 1456, were uninhabited. They were of considerable importance while the Portuguese were extending their discoveries southwards along the coast of Africa and, in the old narratives of voyages, they are often mentioned.

At first, while the islands of the West Indies were supposed to be outlying portions of the East Indian archipelago, and still more, after A.D. 1500, when Cabral discovered Brazil, the Portuguese claimed the most western island of the group, San Antonio, as the initial point for the western measurement. In that way the western limit of their demarcation area was made to include a greater stretch of the continent now known as South America. The Spaniards were not so certain about it, however, and in A.D. 1495, the Spanish sovereigns consulted Don Jaime Ferrer on the meaning of the treaty and he gave his opinion that Fogo, the central island, should be the point of departure. His opinion is still extant in full, and may be found in Navarrete, Vol. II. A translation is appended (Appendix D) and is worth careful perusal. The question submitted was chiefly in regard to some practical method of measuring the 370 leagues upon the Atlantic ocean; but incidentally, it becomes clear that Ferrer, in 1495, had no idea that the Pope, or anybody else, had made a partition of the world; for he says that the eastern lands "on the Arabian Gulf side will belong to the sovereigns, "our masters, should their vessels first navigate there." This single sentence demonstrates beyond cavil that Pope Alexander had not attempted to divide the world; and that the doctrine of right by discovery was the prevailing doctrine of international law then, as now. It also indicates that the development of the idea of a partition line in the far East had not, up to 1495, set in.

Two years later, A.D. 1497, Vasco de Gama led the first Portuguese expedition to India and, following in his track, a swarm of adventurous sailors and soldiers very quickly opened up all the eastern regions. India, China, Siam, Malacca, Java, Borneo, Sumatra and the archipelago of islands were visited to an unknown extent; for the Portuguese were very reticent and made it a capital offence to communicate to foreigners a map of their discoveries in the East. Still, the news of the wonderful riches of those lands spread over western Europe. The ships returned with cargoes, and successful captains made establishments, and successful sailors brought home marvellous tales. From all this Spain was excluded; for on the west, to the north and south, stretched the interminable barrier of America, and all search for an opening through it had been in vain. Secure in her monopoly Portugal was therefore anxious only to stretch her demarcation area westward over Brazil.

Among the Portuguese adventurers who had returned from the farthest East was Ferdinand Magellan—the greatest sailor of those days. In resentment for personal affronts he renounced his allegiance and passed over to Spain. His knowledge and experience led a Spanish expedition through the strait, which still bears his name, and across the great South Sea to the coveted Spice Islands in the East. In 1521, one of his captains, Sebastian El Cano, returned by way of the Cape of Good Hope. The world had been circumnavigated—the farthest East had been reached by sailing on a western course, and for the second time, the Portuguese hope of a monopoly of eastern trade was shattered.

We have seen in our enlightened age the United States on the brink of war with Great Britain because they supposed the latter held against a Spanish power an inconceivably minute and valueless portion of one half of what was in dispute in 1521. But Spain and Portugal did not go to war in 1521; although their people were kindred in speech. They resorted to negotiation instead. It is very remarkable that there was no blustering. Perhaps it was the absence of newspapers—perhaps it was the want of free representative institutions; it is sufficient to say that the convention, called the Junta of Badajoz, met in 1524, as explained in previous pages, and endeavoured to settle the question.

The Portuguese then saw their error in shifting westward the Pope's line of demarcation; for the principle of prolonging the line of Tordesillas round the globe had become established and the further west the line was placed upon the Atlantic, the greater would be the extent of territory in the far East to be brought within the Spanish

sphere of influence. The Portuguese envoys shifted their ground at Badajoz and claimed the most eastern islands of the Cape Verde group as the proper point of departure; hoping thus to gain the Spice Islands in the East. They took their stand upon the stipulation that the expedition, contemplated in the treaty of Tordesillas, was to assemble at the Canaries, and from thence, proceed to the Cape Verde Islands to commence the westward measurement. The islands, they argued, being mentioned in the plural, were to be taken as a group, and Sal and Bonavista (written Boavista) the most eastern islands were the most important. We have, in British America, an interest in two islands of this group for two localities on the east coast of Newfoundland—Fogo and Bonavista—were from the earliest days named after them. But without stopping to discuss that fact we find the Portuguese envoys, in 1524, insisting on Bonavista being the proper point of western departure. The Portuguese contention was by no means well founded, because these two eastern islands are the smallest of the group and do not contain four per cent of the population. The Spanish envoys contended for San Antonio—the most western point—and, although their main motive was to bring the Spice Islands within their line, they had the better argument, for San Antonio is the second in size and in population. The Portuguese protracted the negotiations and, as they thought to gain more by delay, they made difficulties until the conference separated without arriving at a decision. As a matter of fact, ascertained many years later when accurate estimation of longitude could be made, the Spice Islands and Philippines did fall within the Spanish demarcation. One hundred years later a dispute arose about territory on the Rio de la Plata, and the two nations again exchanged bases; for Portugal argued for San Antonio and Spain for Bonavista. It may therefore be safely concluded that Pope Alexander VI. and the Roman Curia were better geographers and international lawyers than the political envoys, either at Tordesillas or Badajoz.

VIII.—Ancient and Mediæval Measures of Length.[17]

At first sight nothing could appear more easy than to determine the line of demarcation fixed by the treaty of Tordesillas. A locality from whence to start, a definite direction in which to sail, and a definite distance to be attained, were all specified, apparently, plainly enough; nevertheless it has been the subject of interminable disputes and recently in the Venezuelan dispute when the question was supposed to have become academic, it once more came to the surface of practical political debate.

To the statesmen of the sixteenth century the ownership of the Moluccas and the western limit of Brazil depended upon the solution of this question. To sailors and scholars it involved the great riddle of the age, "the secret of longitude;" for on the unquiet ocean, these leagues of Tordesillas could not be measured, nor marked, save by astronomical methods requiring a knowledge of the length of a great circle of the earth and consequently of the length of a degree of the equator.

Now, so far as the absolute distance is concerned, to wit, the three hundred and seventy leagues of the treaty, the circumference of the earth had no more to do with it than the circumference of the moon. The difficulty was solely in the practical measurement of distances at sea which the necessity of the case required to be resolved into degrees of longitude. The only method then known was by dead reckoning, and the deceptive character of that mode is manifest in the simple fact that, at the convention of Badajoz in 1524, the maps shown differed by forty-six degrees. We now know, within a few miles, the circumference of the earth and all are agreed as to the length of a degree, but so hard is it to realize the difficulties of past ages that many writers, down to even recent periods, have transposed and applied to marine leagues, the uncertainties which really existed with regard to degrees only. This is confusing to the student, for all the old navigators reckoned in leagues and whether we are following the journals of Columbus, or Cartier, or Champlain, it is necessary, if we wish to be exact, to have clear notions concerning this general standard of sea distances. By unguarded language on this subject, Mr. Harrisse is entangling our early history anew; for in his *Diplomatic History*, he writes of *leagues* of Enciso, *leagues* of Ferrer, *leagues* of Columbus, as if they differed in length, instead of writing of *degrees* of Enciso, of Ferrer, of Columbus; for, while the leagues were the same, the degrees differed in the number of leagues they contained, and when Mr. Harrisse takes varying and erroneous quantities and makes them perform trigonometrical functions, the confusion is made worse; since the sine, cosine, tangent or square of an erroneous quantity acquires no value from being found in mathematical tables—rather the contrary, because to square a mistake is to raise it to a higher power of error.

It is beyond the scope of this paper to discuss the numerous national and provincial land leagues or miles. The inquiry will be confined to the marine league of Columbus and other sailors during the period of the great expansion of European nautical enterprise. For ready reference, it is convenient here to remind the reader that the circumference of the earth is now taken to be 21,600 nautical or geo-

graphical miles. In statute miles it is variously calculated from 24,874 to 25,020 miles, for, as the earth is not a perfect sphere, these measurements are only close approximations. For the same reason, the length of a degree on the equator is estimates at from 69·1 to 69·5 statute miles. In current speech the latter measure is sometimes given, though the former is more nearly correct.

All the countries of Western Europe which fell under the influence of Rome retained permanent traces of the itinerary measures of the Empire in the mile, or *mille passuum* of the Roman soldier. In the Latin countries the measure persisted; and even in England, nearly until the end of the reign of Elizabeth, the mile was 5000 feet or 1000 paces; and was only 146 feet longer than the Roman mile. In the eastern part of the Empire the Greek stadium was the standard and so continued until the Mohammedan invasion. The Roman geographers borrowed their science from the Greeks and used in their writings the Greek standard measure, and this continued to be the measure used by writers on cosmography throughout the middle ages; for after the time of Ptolemy no original work was done, save by the Arabians, until long after the period now under review. The stade is continually cited in the literature of the age of Columbus and it is a very convenient measure, for it bore an accepted and simple ratio to the mile and league of those days. Ptolemy was the chief authority, but the works of Aristotle, Eratosthenes, Strabo and other Greeks, as well as the Roman writers, Pliny, Macrobius and Pomponius Mela, were continually referred to with deference. It is difficult to realize the persistent weight of the authority of Ptolemy. Not until 1569 did Gerard Mercator lead the way in revolt and all traces of the great error of Ptolemy, as to the length of the Mediterranean Sea, did not disappear from the maps until the beginning of the last century. For 1500 years Ptolemy reigned supreme and, therefore, it is not lost labour to study the Greek geographers, if we wish to understand the age of Columbus.

The true circumference of the earth was not known to the Greeks, and they made different estimates; from Aristotle, 400,000 stades, to Ptolemy, 180,000 stades. The estimated length of a degree of the equator varied in proportion, from 1111 $^1/_9$ to 500 stades respectively. In Appendix E, I have given a comparative table of the length of the equator and of a degree thereof as held by the chief geographical writers, from Aristotle down to the date of the convention at Badajoz. The figures are given in Greek stades, and Italian leagues and miles. In a separate column is the translation of these figures into nautical miles of the present day. The compilation has been made in order to assist the student in grasping quickly the value of these ancient measures.

Putting aside Aristotle and Archimedes, they fall into three schools—those who follow Eratosthenes and reckon 700, those who follow Ptolemy and reckon 500 stades to a degree, and those who follow the Arabian measurements. The true length of a degree is 600 stades; so that one school erred by one hundred stades in excess and another by 100 stades in defect. Lelewel states very confidently that Pytheas of Marseilles estimated the degree at 600 stades; thus making the circumference of the earth 216,000 stades; the precise equivalent of our 21,600 nautical miles. This, if true, would be exceedingly interesting; but after examining Lelewel's authorities, I have not ventured to include Pytheas in the table.

The science of the Greeks loomed very large to the eyes of the cosmographers of the fourteenth and fifteenth centuries, and they entertained the opinion that the Greeks knew the true circumference of the earth and that if the great geographers of antiquity differed in the number of stades at which they estimated it, the difference was caused by their use of stades of various lengths. There was nothing in the Greek writings to suggest any such opinion. The Greek authors used the word "stades" without any qualification and without any apparent fear of being misunderstood; plainly intending in all their arguments, the Olympic stade of 600 Greek feet, which was the length of the foot-race course at the Olympic games. In the third century of our era, after the work of the geographers was over, there did come into use, in Egypt and in the Asiatic provinces of Rome, a stade of which seven and a half went to the Roman mile. This stade, called the Phileterian stade, affected the measures of the Arabs and its influence appeared in the writings of Alfragan and passed thence into the works of Bacon and D'Ailly and, through them, into the speculations of Columbus.

The idea of different stades having been used by the Greek cosmographers is first met with, says Humboldt, in a memoir by Jaime Ferrer to the Spanish sovereigns relative to the line of demarcation. This is an exceedingly interesting document and, as it throws strong light upon the nautical science of the period in review, a translation is given at Appendix D. Ferrer said that the 252,000 stades of Eratosthenes, the 180,000 of Ptolemy and the measurements of Strabo, Alfragan and Macrobius were the same in sum; but that the stades of Ptolemy were larger. (See App. D). Ptolemy, at that time, was an authority not to be gainsaid and yet Ferrer held, with Eratosthenes, that in a degree of a great circle, there were 700 stades of eight to a Roman mile. This heroic method of reconciling the ancient authors gained ground in an uncritical age and was advocated later by Delisle, Freret, Gosselin and many others, down to the early years of the present

century. Under the influence of this perennial fountain of error the subject became an arena of confusion. Without wearying the reader by going over this maze of unsettled opinion it will be sufficient to refer to the pages of Lelewel; for although, in his work on Pytheas, he distinguishes only two kinds of stades, the Olympic of eight to a mile and the Italic of eight and one third to a mile, in his larger work there are bewildering dissertations on the different stades and miles of ancient authors. We read of very small stades 10 or 12½ to a mile, of Phileterian stades 7½ to a mile which later became 7 to a mile, of stades 5 to a mile, of Posidonian stades 500 to a degree, of stades of latitude, and of stades 502 ½ to a degree. Then we may read of miles of longitude, of Venetian miles 60 to a degree, of miles 80 and 85 to a degree. In one map he finds seven different valuations of miles—50, 55, 67, 83, 86 and 90 to a degree, and he naively remarks that this inequality of miles to a degree is common to nearly all the maps of the middle ages. Thus the absurdity is plainly apparent of taking these maps as seriously as if they had been compiled by scientific survey, and of making measures in common and daily use, such as the stade and the mile, shift and vary proportionately to the errors on the early maps and to suit the speculative notions of men groping during 2000 years to discover the true circumference of the earth and the corresponding length of a degree of longitude. These "fancy stades," as D'Avezac called them, are "will o' the wisp" lights to beguile the student of historical geography.

The researches of Colonel Leake cleared away this fog and his views were supported by Uckert, Muller, St. Martin and later writers so that it may be now be considered as established that the stade of the Greek writers was equivalent to 600 Greek feet, equal to 606·75 English feet. From this arises a convenient and very nearly accurate ratio for converting, at sight, the Greek stades into our own familiar nautical miles, as follows :—

	1 Olympic stade	= 606·75	English feet.	
	10 " "	= 6067·5	"	"
and				
	1 nautical mile	= 6075·5	"	"
	1 admiralty knot	= 6086·5	"	"
or by Clarke's measurement		= 6087·11	"	"

Therefore 10 Olympic stades = 1 minute of the equator,
and 600 " " = 1 degree " "

The Greek and modern standards then, though not absolutely equivalent, are sufficiently so for all practical purposes. The difference between ten Greek stadia and our accepted nautical mile is not greater than that between the nautical mile of customary computation and the

admiralty knot; and, as before stated, the precise circumference of the earth has not even yet been ascertained with absolute accuracy.

Although the Greek itinerary standard was the stadium, or foot-race course at Olympia, it was repeated in the stadia of all other Greek cities in Europe or Asia Minor, erected for the athletic games, of which the Greeks were so fond; and, in fact, wherever Greek influence extended the stade continued to be the established standard.

The Roman standard itinerary measure was characteristic of the world-conquerors. The mile is the *mille passuum*—the thousand paces—of the legionary soldiers, and, as they subdued Western Europe, the Roman power was consolidated by a perfect system of roads, and their milestones recorded the distances and familiarized the people for many centuries with a general standard of length which overrode the local measures of the shifting and semi-barbarous tribes of the West. The integer of this standard is the *passus*—the pace; not the *gradus*, or step—a distinction sometimes overlooked; because, as the word passed through the French into the English language it became synonymous with step; whereas the Roman *passus* was a double step equal to five Roman feet. In the British army the step is two and a half feet and the *passus* is five feet; but the Roman soldier had a slightly shorter step and his thousand paces were equivalent to only 4,854 English feet. I am not forgetting that, along the Rhine, there existed in the army, in the later years of the Empire, a longer foot—the Drusian foot—equal to 13·1 English inches; but the standard in law and the measure along the roads was the Roman mile, related to the Roman foot of 11·65 English inches. The following is a short table of these standards:

1 Roman mile	= 1000 passus	= 4854 English feet.
1 Old English mile	= 1000 paces	= 5000 " "
1 modern statute mile		= 5280 " "
75 Roman miles (75·09)		= 1 degree.

It is instructive to observe that even the old English mile is based upon the idea of a thousand paces. "Our ancestors," as Professor De Morgan remarked, "if they had not the old Roman mile, thought they "had it." The difference was only 146 feet; for the Roman foot being 11·65 English inches, 63 Roman are equivalent to 61 English feet. Capt. John Davis, of Arctic fame, one of the most skilful sailors of Queen Elizabeth's reign gives in his *Seaman's Secrets* (a treatise on navigation published in 1595) the following table:—10 inches = 1 foot; 5 feet = 1 pace; 1000 paces = 1 mile; 3 miles = 1 league; 20 leagues = 1 degree. The editor of *Davis's Works* in the *Hakluyt Series* adds a note to say that this must be misprint as a mile is 5,280 feet; but it is no misprint but an accurate statement of measures then in common use.

The expression *statute mile* suggests the existence of an older customary mile but, while the shorter measures are often mentioned in the statutes of the early parliaments, they make no references to miles, nor do they define a mile in any way. Our *statute mile* first made its appearance in 35 Eliz. cap. vi, a statute making certain regulations concerning building houses within three miles of London. Incidentally to its object and, as if some necessity existed for the definition, the mile intended is said to consist of eight furlongs. The mile of 5000 feet contains only 7½ furlongs, 3 perches and 2 palms; but the new mile is divisible into 8 furlongs, into 320 perches, poles or rods, and into 1760 yards; which native English measures, while they form convenient divisors of the statute mile of 5280 feet, cannot be harmonized with the Roman mile of 5000 feet.

If, then, the Roman mile persisted in England down to the last year of the reign of Elizabeth, with only the slight modification above noted, there is little cause for wonder that it should have persisted in its integrity in the countries round the Mediterranean where the Romance languages are spoken; and these were the countries wherein the great navigators were born and from which issued the expeditions of early discovery to the East and West Indies. Cabot and Verazzano were Italians, in the service of England and France respectively, and their voyages were the foundations of the claims of these nations in North America. The earliest literature of marine adventure is in Spanish, Portuguese, Italian and Latin, and the integer of distance is, throughout, the Roman mile known as the Italian mile and its multiple the Italian league—the marine league of the Mediterranean.

The student of the early narratives meets continually with the league as a measure common to all. Whether it be Columbus, Vespucci, Magellan, Cabot, Diaz, De Gama, Galvano, Cartier, Ramusio or Oviedo, it is always the marine league in which their distances are calculated and Hakluyt in his translations carried them over without explanation, qualification or change. Sometimes we meet with miles, but they are the Italian or Roman miles. I am leaving out of the question the Swiss, Danish and German miles and leagues, because these nations took no part in early discovery and did not fall under the Roman power; but among the great maritime nations of Europe during the period under review, the marine league was a standard as universal as was the stade in Greek civilization and Greek geography.

The word league (Low Latin leuca and leuga) is Celtic and signifies a stone, in some Celtic tongues a flat stone, and was probably a road mark. It was a measure used in Celtic Gaul in the time of Ammianus Marcellinus and seems to have been originally 1500 *passus* in length.

It was in use, in early times, by the sailors of the Mediterranean, as a sea measure exactly equivalent to four Roman or Italian miles. The writers of the period of expansion had, therefore, no need to qualify or translate their nautical distances, for they were understood by all, at the simple ratio of eight stades to a mile and four miles to a league. Notions concerning "fancy stades" and "fancy leagues" are anachronistic stumbling blocks in the way of a student. The early writers did indeed speculate much as to how many leagues went to a degree; but not as to the length of a stade, a mile or a league. These latter were their standards, in which they were trying to work out the length of a great circle of the earth and of its three hundred and sixtieth part, to wit,—a degree. They were the known elements— the a and b of the problem; the length of a degree was the x and y—the unknown quantity. The league was an absolute measure—any man might pace it off on any road —the degree depended upon the circumference of the earth, and it is evident that the 370 leagues of the treaty of Tordesillas would extend to a far greater western longitude on the shrunken globe of Columbus than on the expanded globe of Jaime Ferrer's imagination.

As "fancy stades" of $1111\,{}^{1}|_{9}$, $833\,{}^{1}|_{3}$, 700 and 500 to a degree were invented by geographers, from Don Jaime Ferrer down to recent times, in order to harmonize the theories of Aristotle, Archimedes, Eratosthenes and Ptolemy as to the earth's circumference, so, these being exploded, similar illusions sprang up concerning leagues and, even in the present day, are befogging the nautical history of the fifteenth and sixteenth centuries. None of the old authors or navigators suspect they are dealing with a variable measure. The Pope and the treaty-makers, as well as the seamen, give their distances, their sailing directions, in leagues—just only leagues—without a qualifying adjective. In late works, however, we read of leagues $14\,{}^{1}|_{6}$, 15, $16\,{}^{1}|_{2}$, $16\,{}^{2}|_{3}$, $17\,{}^{1}|_{2}$ and $21\,{}^{5}|_{8}$ to a degree, "Merveilleux procédé" writes D'Avezac, "qui, pour "assurer l'exactitude du mesurage, crée la mesure même d'après l'objet "bien ou mal mesuré."

It is in this respect that Mr. Harrisse's *Diplomatic History* will be apt to mislead the unwary reader, and the danger is the greater because of the mathematical top-dressing which gives a semblance of solidity to what is really a quicksand of hypotheses. Thus we read—(p. 92):

"Ferrer's above stated data result in four different lengths for his "league, viz., 21·353, 21·813, 21·625 and 21·875 to the degree of the "equator of his sphere. For reasons given in our notes we select from "among these four valuations 21·875 to his equatorial degree upon which "to base our calculations." Mr. Harrisse selected the right valuation according to Eratosthenes, but, not according to Ferrer, for a reference

to Ferrer's statement (Appendix D) will show that he (Ferrer) did not give a valuation of 21·875 ($21\,{}^{7}|_{8}$) but a valuation of 21·625 ($21\,{}^{5}|_{8}$) leagues for his equinoctial degree. Ferrer's arithmetic was wrong according to his datum, and his other measurements are also wrong. The only one which concerns this inquiry is that on the latitude of the Cape Verde Islands, which he states to be 15°, and he gives the corresponding length of a degree on that parallel as $20\,{}^{5}|_{8}$ leagues; whereas a correct calculation from the data of Eratosthenes (which he gives correctly enough) would make it $21\,{}^{1}|_{8}$ (21·129) leagues. These are not four valuations of the *league*, but four valuations of the *degree*. It will be seen from the table (Appendix E) that Ferrer, in following Eratosthenes, made the globe one-sixth larger than it is, and in his statement (App. D, para. 10) it will also be seen that he knew very little about the ancient cosmographers; for he enumerates among his learned men "Ambrosi, Macrobi, Teodosi," as three distinct persons, whereas they are one, to wit, Aurelius Theodosius Macrobius, and, above all, he was wrong in assuming the 500 stades of Ptolemy and the 700 stades of Eratosthenes to express a degree of the same absolute length—to be in short identical concrete quantities. Of what value are the sines or tangents of such quantities as these? Or what mathematical results can be based upon the statements of an authority who did not reason correctly, even from his own erroneous data?

Again, with regard to Enciso, we read (at p. 105) that "in Enciso's "sphere, the value of the equatorial degree was 16·666 leagues," and lower down "Enciso's equatorial degree contained 18·0498 of his "leagues," and (at p. 192) the windrose in Enciso's *Suma*, "seems to "have been calculated on the basis of $17\,{}^{1}|_{2}$ leagues." Mr. Harrisse in this case thinks that "logic requires" him to select $16\,{}^{2}|_{3}$ leagues as the proper quantity. That is open to question, but here again, what value can such data as these have upon which to base a mathematical argument?

It would be wrong, however, to suppose that Mr. Harrisse thinks he is dealing with real leagues. It is the inaccuracy of writing "leagues" of Enciso or Ferrer, etc., when he means "degrees" which is misleading. In a note at p. 193, he says, "The probability is that the league, which "is always a unit usual and fixed, was the same for Enciso and Ferrer; "that is at the rate of 32 stades for one league." This throws an additional vagueness over the matter. It is like saying that it is *probable* that the three angles of a triangle are equal to two right angles, and then going on to argue impartially, by trigonometrical methods, on both hypotheses—that they are and that they are not thus equal. The effect is confusing and tends to reopen the theories of "fancy leagues" which

were exploded by D'Avezac, forty years ago, in his discussion with Varnhagen.

The utter inapplicability of mathematical reasoning in questions such as these is further shown at p. 190, where Mr. Harrisse sets forth his mode of measuring the Cantino map and, after submitting it to mathematical methods, he concludes "that no reliance is to be placed "on the metrology of that map." Again, at p. 210, the Ribeiro map is put through a similar trigonometrical course and the conclusion is "that no reliance is to be placed, scientifically speaking, on the carto-"graphical statements of the period." The wonder is that the attempt was ever made; but now that Mr. Harrisse has given it up we may, at least, hope that lesser authorities will cease their anachronistic efforts to scale off these crude and tentative maps of the old navigators as if they were admiralty charts or publications of the U. S. Geodetic Survey.

The *Suma de Geographia* of Fernandez de Enciso was published at Seville in 1519 and does, indeed, give the circumference of the earth as 6000 leagues. It was an estimation in round numbers, for it was equivalent to 24,000 Italian miles, and is found not only in Enciso but in some other authorities. That, divided by 360, gives $16\,{}^{2}|_{3}$ leagues to a degree or 16·666 as Mr. Harrisse states (p. 105). The reason, therefore, of Mr. Harrisse's statement that "Enciso's equatorial degree con-"tained 18·0489 of his leagues" is not apparent and a careful perusal of the intricate calculations from pp. 193 to 197, in which Ferrer's leagues, and Enciso's leagues, and our marine leagues, are mingled with Greek stades and French metres fails to make it clear. The mixing up of absolute quantities such as leagues with shifting and unknown quantities such as degrees is fatal to clear reasoning. No doubt the league both of Enciso and of Ferrer consists of 32 stades; but Ferrer counted $21\,{}^{7}|_{8}$ and Enciso $16\,{}^{2}|_{3}$ of them to a degree. The quantities are irreconcilable and cannot be combined to form a third league. It is certain that neither Enciso or any one else had a league of 18·0498 to a degree for there is not only his own statement as given above; but his calculation of the distance between the port of Higueras and the island of San Thome, which he gives at 117 degrees and equivalent to 1950 leagues, and if one be divided into the other the quotient is again $16\,{}^{2}|_{3}$ leagues to a degree. The distances, at that time were inconceivably erroneous but the fact of this distance being over-estimated does not affect the ratio between the two quantities given.

Returning to the *Suma* of Enciso it must be observed that, when it was written, a more correct estimate of the length of a degree was very generally accepted and to this Enciso bears most decided testimony in

that part of his book which may be called scientific, for it is in connection with a windrose and contains practical instructions for navigation, to the effect that in sailing on a direct northern course until the pole star is elevated one degree, "that degree is equal to seventeen leagues "and a half and that is the distance you will have gone." There is no uncertainty about that statement ; but Varnhagen and other advocates of "fancy leagues," in order to get leagues to suit their theories, started an idea that latitudinal and longitudinal degrees on a great circle of the earth were of different length. Enciso disposes of that idea. His sailing directions continue thus : "Also, if your course is one point the "distance sailed will be 17 $^{3}|_{4}$ leagues and departure 3 $^{1}|_{2}$ leagues for the "degree. If your course be two points, count the distance sailed 19 $^{1}|_{6}$

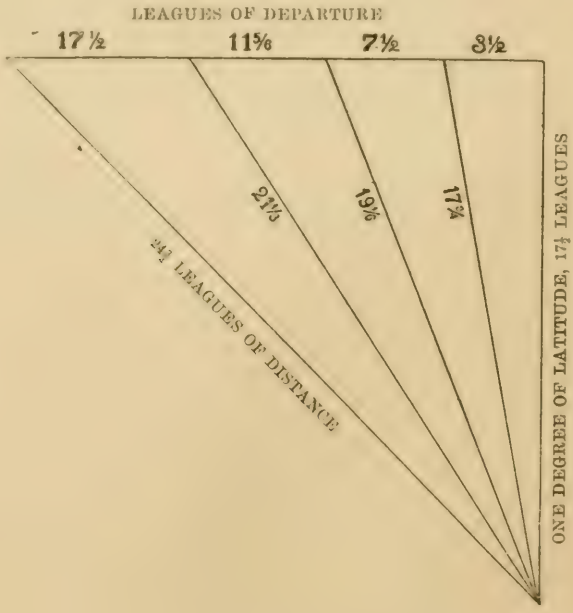

FIGURE 1.

"leagues and departure 7 $^{1}|_{2}$ leagues. If three points count the distance "sailed as 21 $^{1}|_{3}$ leagues and the departure 11 $^{5}|_{6}$ leagues. If the course "be four points count the distance as 24 $^{3}|_{4}$ leagues and the departure "17 $^{1}|_{2}$ leagues." The above diagram (Fig. 1) will show the meaning graphically .

Reference to a Traverse Table, in any work on navigation, will show these figures to be correct. For comparison, the statement in tabular form is as follows :—

One degree of Latitude $17\frac{1}{2}$ leagues, by Enciso's windrose, is equal	Leagues.		
	Latitude One Degree.	Longitude or Departure.	Distance Sailed.
North by West ; Course 1 point W.....	$17\frac{1}{2}$	$3\frac{1}{2}$	$17\frac{3}{4}$
North-northwest ; Course 2 points W.....	$17\frac{1}{2}$	$7\frac{1}{2}$	$19\frac{1}{6}$
Northwest by North ; Course 3 points W..	$17\frac{1}{2}$	$11\frac{5}{6}$	$21\frac{1}{3}$
Northwest ; Course 4 points W.....	$17\frac{1}{2}$	$17\frac{1}{2}$	$24\frac{3}{4}$

Enciso's *Suma* is a rare book. There are four editions of it, A.D. 1519, 1530, 1530, 1546, all of which are in the Lenox Library and through the courtesy of the librarian, Mr. Wilberforce Eames, I am able to give the following tracing of the upper half of the windrose. (Fig. 2).

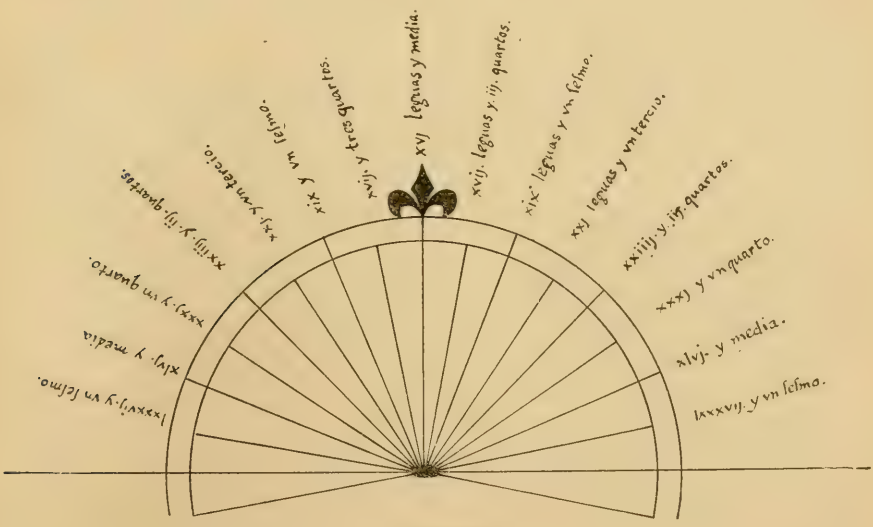

FIGURE 2.

Close inspection will show a misprint over the north point. A stroke is dropped and it reads XVI instead of XVII ; but it is clearly a misprint for the text underneath gives the distance at length *dezisiete leguas e media* seventeen leagues and a half. The error is corrected in the later editions. It is apparent by Fig. 1, for the course of four points

is 45° and the triangle is right angled. For the preceding reasons it is evident that Enciso knew that the true length of a degree was $17\,{}^{1}|_{2}$ leagues, although the rate of $16\,{}^{2}|_{3}$ leagues was still held by many when he wrote. It will, I trust, be noted that all these sailors and cosmographers knew that the world was a sphere and in speculating upon the length of degrees of latitude and longitude they meant, as we do, degrees upon great circles unless they mention some specific latitude they are measuring upon.

I come now to inquire why the round number of 6000 leagues, or 24,000 Roman miles, should have been accepted as the measure of the circumference of the earth, and I find the answer in a letter of Amerigo Vespucci to Medici as follows: "The reason why I count $16\,{}^{2}|_{3}$ "leagues to a degree is that according to Ptolemy and Alfragan the "world is 24,000 miles in circumference which is equal to 6000 "leagues which divided by 360 is equal to $16\,{}^{2}|_{3}$ leagues, a result which "I have many times tested by the point of pilots and have found it "sound and true." The reason is, therefore, to be traced back to Ptolemy; though by way of Alfragan, and it must be observed therefore, that it is a Greek, not an Arabian measurement.

It has been stated already that, when the Arabs overran the Eastern Roman Empire, they found in use a stade (Egyptian, royal, or Philetorian) of which $7\,{}^{1}|_{2}$ went to a Roman mile. They did not know that this measure did not arise until after Ptolemy's time and they divided the 500 stades of Ptolemy's degree by $7\,{}^{1}|_{2}$, and thus made it $66\,{}^{2}|_{3}$ Roman miles, which, in leagues of four to a mile, was equal to $16\,{}^{2}|_{3}$ leagues; and this leads to a consideration of the effect the Arabian learning had on the cosmological ideas of the period now in review.

During the long ages of confusion in the West, while wave after wave of barbarians submerged the Roman civilization and the lamp of learning burned only in the seclusion of the cloister, the Arabians cultivated the arts and sciences at the chief centres of their power—Bagdad, Cairo and Cordova. The works of Aristotle, Archimedes, and Ptolemy, among other authors, were translated into Arabic for the great school of geography and astronomy founded at Bagdad, and about A.D. 833, the Caliph Almamoun ordered several measurements to be made of an arc of the meridian, the only attempt at a really scientific solution of the problem from the time of the Greeks until the beginning of the eighteenth century. Greek science first reached Western Europe through Arabic translations. The works of Massaudy and other Arabian geographers, passed into Spain through the Moors, and the *Celestial Movements* of Alfragan were translated into Latin and became well known to the learned. The measurements under Almamoun had

resulted in an estimation of $56\,{}^{2}|_{3}$ miles to a degree and were accepted as true by Friar Bacon and Cardinal D'Ailly and others of the favourite authors of Columbus, who, dividing that figure by four, arrived at the conclusion he adhered to all his life that the length of a degree was $14\,{}^{1}|_{6}$ leagues, and he even asserted that he had verified it on one of his voyages to Guinea. It has not been absolutely proved that these Arabian miles were equivalent to Roman miles; but the inquiry is long and it is sufficient now to say that they were taken to be equivalent, and in the belief that the earth was much smaller than it is, the admiral discovered America and thought it was India. In that way arose the belief, to which the admiral and his son adhered, in a degree of $14\,{}^{1}|_{6}$ leagues.

The different estimations of the length of a degree at the close of the fifteenth century can nearly all be traced back to some manipulation of Ptolemy's figures. If his 500 stades be divided by eight—the true divisor—we have another estimate often met with, viz., $62\,{}^{1}|_{2}$ miles to a degree or $15\,{}^{5}|_{8}$ leagues. This again, in current writing was rounded off to 60 miles and 15 leagues and given out also as Ptolemy's measurement. Jaime Ferrer alone followed Eratosthenes and valued the degree at 700 stades and, dividing by eight, he made it $87\,{}^{1}|_{2}$ miles; this divided again by four made $21\,{}^{7}|_{8}$ leagues in reality, though by some error it is $21\,{}^{5}|_{8}$ in his opinion (App. D); but even he could not throw off the influence of Ptolemy and as pointed out already was driven to suppose that Ptolemy's 500 stades were longer and were equivalent to the 700 of Eratosthenes. There was in fact no settled estimate and we find in the opinion of Duran, Cabot and Vespucci, at Badajoz, that they quote Ptolemy for a length of $62\,{}^{1}|_{2}$ miles while themselves valuing a degree at 70 miles.

It is an anachronism to expect, in the writers of pre-scientific days, that precision of statement demanded by modern science and the reader must be prepared to meet with occasional passages which conflict with the general trend of the authorities. It is certain that Gomara held to the valuation of $17\,{}^{1}|_{2}$ leagues; but he also quotes Ptolemy loosely, for he says (in Eden's translation) "He (Ptolemy) assigned likewise to "every degree three score miles which make seventeen Spanish leagues "and a half." Here are two manifest slips, because Ptolemy's degree was $62\,{}^{1}|_{2}$ miles and $17\,{}^{1}|_{2}$ leagues were 70 miles. This last valuation is beyond question; for Fernan Columbus, in his official opinion at Badajoz, says expressly that "Castillian or marine leagues" are four miles in length. Again in a passage in the *Fifth Decade* of Peter Martyr we find that author complaining that sailors counted the 175 leagues, from Borneo to Malacca as ten degrees, whereas "the ancient

"philosophers reckoned 15 leagues or 60 miles to a degree." This passage shows how loosely Ptolemy was quoted, and also that the belief in 17 $^1|_2$ leagues to a degree had then been established at sea.

That which had been hidden from the learned throughout the ages, was revealed to the practical mariner unskilled in book lore; but skilled to watch the elevation or sinking of the pole-star on a northern or southern course, and skilled also to estimate the dead reckoning of his little vessel by the aid of his sand glass. Therefore, when the length of voyages extended over thousands of miles, the elaborate measurements of the Greeks and Arabians were found to be wrong and the valuation of 17 $^1|_2$ leagues or 70 miles was accepted by sailors in advance of scholars. It was not far out of the way; since 70 Italian miles are equal to 64·3 English statute miles and 69·1 of these last miles are now reckoned to be the length of a degree of a great circle.

We may then conclude, with Navarrete and D'Avezac, that, at least as early as A.D. 1517, the valuation of 17 $^1|_2$ leagues had come into general use. Humboldt unhesitatingly quotes the leagues of Tordesillas at that rate. Herrera would seem to know of no other; for at the very outset of his *History*, he gives the circumference of the earth as 6,300 leagues. Magellan, writing in A.D. 1519, to King Ferdinand, stated that the island of San Antonio is 22° east of the line of demarcation. He gave the latitude at 17°, proving that he was reckoning at the rate of 17 $^1|_2$ leagues to an equatorial degree. At the convention of Badajoz, in A.D. 1524, Ruy de Villegas stated that he had measured a degree with that result, and Thomas Duran, Sebastian Cabot and Juan Vespucci, not only concurred in that valuation, but added that it was the usual estimate of Spanish and Portuguese sailors. While this was the opinion of the Spanish pilots and experts, the Spanish judges clung to the 62 $^1|_2$ miles of Ptolemy; because they thought that the Portuguese were stretching out the distance to 70 miles for the purpose of including the Spice Islands within their line.

In A.D. 1529, at the treaty of Saragossa, the ratio of 17 $^1|_2$ leagues was admitted on both sides; for the Spaniards had recognized the fact that, as each party had 180 degrees, the length of a degree made no difference. It had to count on both sides, and in after years, whenever the treaty came up for discussion the same ratio was made the basis of argument. It persists all through the nautical authorities, not only in Spain, but in France; for we find that Champlain, in A.D. 1632, when giving instructions for making charts, laid down the rule that the scale must be 17 $^1|_2$ leagues to a degree.

The reader will see, from these remarks, that the old writers deal with only one league, that which was a multiple of the Roman mile.

The doubt was solely as to the number of these leagues in a degree. To write of leagues of Enciso, of Ferrer, or of anybody else, is to introduce uncertainty and error into the early history of this continent. It is most important to build up our history on a solid basis and to follow the tracks of the early voyagers along our shores with some degree of certainty. If then, the argument of this chapter be followed and accepted, the reader of the old narratives will have to do with only one league—the marine league used by Spanish, Portuguese, Italian and French sailors; not only at the time under review but for an indefinitely long period before and an indefinitely long time after. In the following table I give its equivalent value in English measures and, in order to show the limit of variation between the different authorities, I give also the value as taken by Captain Fox (on the authority of Rear Admiral Rogers of the U.S. Naval Observatory) for his calculations upon the landfall of Columbus. There is a difference of twelve feet in the mile. This will serve to show the close approximation of all the estimations made, and to explain the slight variations among them.

1 Roman or Italian mile	= 1,618 yards	= 4,854 feet English.			
4 " " miles	= 6,472 "	= 19,416 " "			
or, according to Captain Fox,					
1 Roman or Italian mile	= 1,614 yards	= 4,842 " "			
4 " " miles	= 6,456 "	= 19,368 " "			
4 miles = 1 marine league of the early navigators.					

The reader is again referred to Appendix E for a detailed table of the different views held concerning the subject of this chapter. These opinions are ranged in descending order, from Aristotle with a degree of 111·11 to Columbus with a degree of 45·33 of our modern nautical miles. The figures are given in Greek stades, Italian miles, and nautical miles. The equivalents in our nautical miles are printed for convenient reference in black faced type in the central columns.

IX.—The Lines of Demarcation on the Ocean.

It has been shown that the line of demarcation, about which so much has been written during the past four hundred years—and so eloquently—is not the line of Pope Alexander. It is the line of the Spanish and Portuguese plenipotentiaries at Tordesillas, in A.D. 1494 the following year. They selected as their *terminus a quo* a group of islands—the Cape Verde Islands—extending over three degrees of longitude, without indicating which one they proposed to measure from and, in after years, in consequence, some measured from Bonavista, the eastern island, some from Fogo, the centre island, and some from San

Antonio, the western island: according to the shifting political necessities which from time to time arose. For reasons stated on a previous page, the western island must be considered to be the legal point of departure, and it—San Antonio—is in 17° 12′ of north latitude and 25° 5′ 7″ of west longitude.

Upon reflection, it will appear that there are only two inquiries concerning the location of the line of demarcation which can yield any result of historical interest. First, where does this line fall under present conditions of nautical science? and second, where was it supposed to fall by the Spaniards and Portuguese governments, under the conditions existing at the time of the treaty, or as near as possible to it? This latter problem may be solved by the aid of maps; but not by weaving a tissue of hypotheses out of Jaime Ferrer's errors or by performing mathematical processes on globes of imaginary dimensions. If the distances had been stated in degrees the case would be different, but the Pope and the plenipotentiaries avoided degrees and laid down the distance in leagues. The degree is a relative term of length having no intrinsic value but depending on the circle of which it is the three hundred and sixtieth part. It is the same on a library globe as on the globe of the earth—the league is a definite concrete quantity independent of globes or circles. The terrestrial globe of Ferrer was 252,000 stades in circumference; Enciso had two sizes in his *Suma*, one (which Mr. Harrisse adopts) of 192,000 stades, and another which he gave out to practical sailors of 201,600 stades; Columbus imagined a globe of 163,200 stades only, and to that he clung all his life. It is manifest that 370 leagues measured upon four globes so different in magnitude would extend over greatly different numbers of degrees, and when all these varying quantities are combined with others as problematical and turned round in a mathematical kaleidoscope, the effect is bewildering.

Returning to the first question, I would repeat that the real latitude of the island of San Antonio is 17° 12′ north, and would add that, on that parallel, degrees of longitude are 57·32 of our nautical miles in length. It has been shown, on previous pages, that four Roman or old Italian miles, of 1618 English yards each, were reckoned to a league, and therefore, the 370 leagues of Tordesillas multiplied by four were 1480 Italian miles. As the English nautical mile contains 2029 English yards, the following sum in simple arithemetic will tell us what these leagues are in our familiar measure:—

yds.		yds.			Ital. miles.		Eng. naut. miles.
2029	:	1618	:	:	1480	:	1180·2

The 370 leagues are, therefore, equivalent to 1180 of our marine miles, omitting the fraction.

It has been stated that on the parallel of San Antonio a degree of longitude is 57·32 nautical miles. We have, therefore, to divide one quantity by the other, thus—

$$1180{\cdot}2 \div 57{\cdot}32 = 20^\circ\ 35',$$

and the equivalent in longitude is therefore 20° 35′. To find this point on our charts the longitude west from Greenwich of the starting point must be added and the longitude of San Antonio is 25° 5′, and

$$25^\circ\ 5' + 20^\circ\ 35' = 45^\circ\ 40' \text{ west longitude};$$

so that if we draw a line on an admiralty chart at the meridian of 45° 40′, it will be the true line of the treaty of Tordesillas, and we shall find that the line of demarcation, if calculated on true data, would never have touched any point on the continent of North America. Cape Race is its most eastern point and is in longitude 53° 4′ W. So the true line of Tordesillas passes 7° 24′ seaward of it and cuts the coast of Greenland in Davis' Strait. The Dominion of Canada is thus shut up in the Spanish demarcation and only the neglected John Cabot, over whose unknown tomb memory has raised no trophies, has saved us from the full force of the primary count in the Venezuelan argument.

Coming now to the second point of our inquiry, it must be admitted that, to all intents and purposes, this line of Tordesillas did at the period under review, cut our coasts; since both the Spaniards and Portuguese thought it did and governed themselves accordingly. As explained before, the present paper is not concerned with South America; but the map in front of Mr. Harrisse's *History* contains the results of his calculations on the "spheres" of Ribeiro, Ferrer, Enciso, Oviedo, Cantino and the Badajoz experts, transferred to our admiralty charts, and they show lines of west longitude from 42° 30′ to 49° 25′, so that in any of these worlds the line would have passed seawards, by nearly four degrees, of Cape Race; but, what is more remarkable, the unexpected result appears that Jaime Ferrer with a world of 252,000 stades, and Enciso with a world of 201,600 stades, should have come out to within one mile of each other as mathematically calculated by Mr. Harrisse. It is also worthy of remark that the present writer, working upon the world as now known of 216,000 stades in circumference, by simple arithmetic and with modern data, should have arrived within three miles of the same conclusion. Stated in Italian miles the lines are as follows: in the present paper with a degree of 75 miles at 45° 40′; Enciso in Mr. Harrisse's map with a degree of 66·66 miles at 45° 38′, and Ferrer on the same map with a degree of 87·5 miles at 45° 37′. This is a very surprising result of mathematical reasoning. It means in effect that whether 370 leagues (equal to 1480 Italian miles) are divided by 75, 87·5 or 66·6, the quotient is the same within a limit of only 3 minutes of longitude.

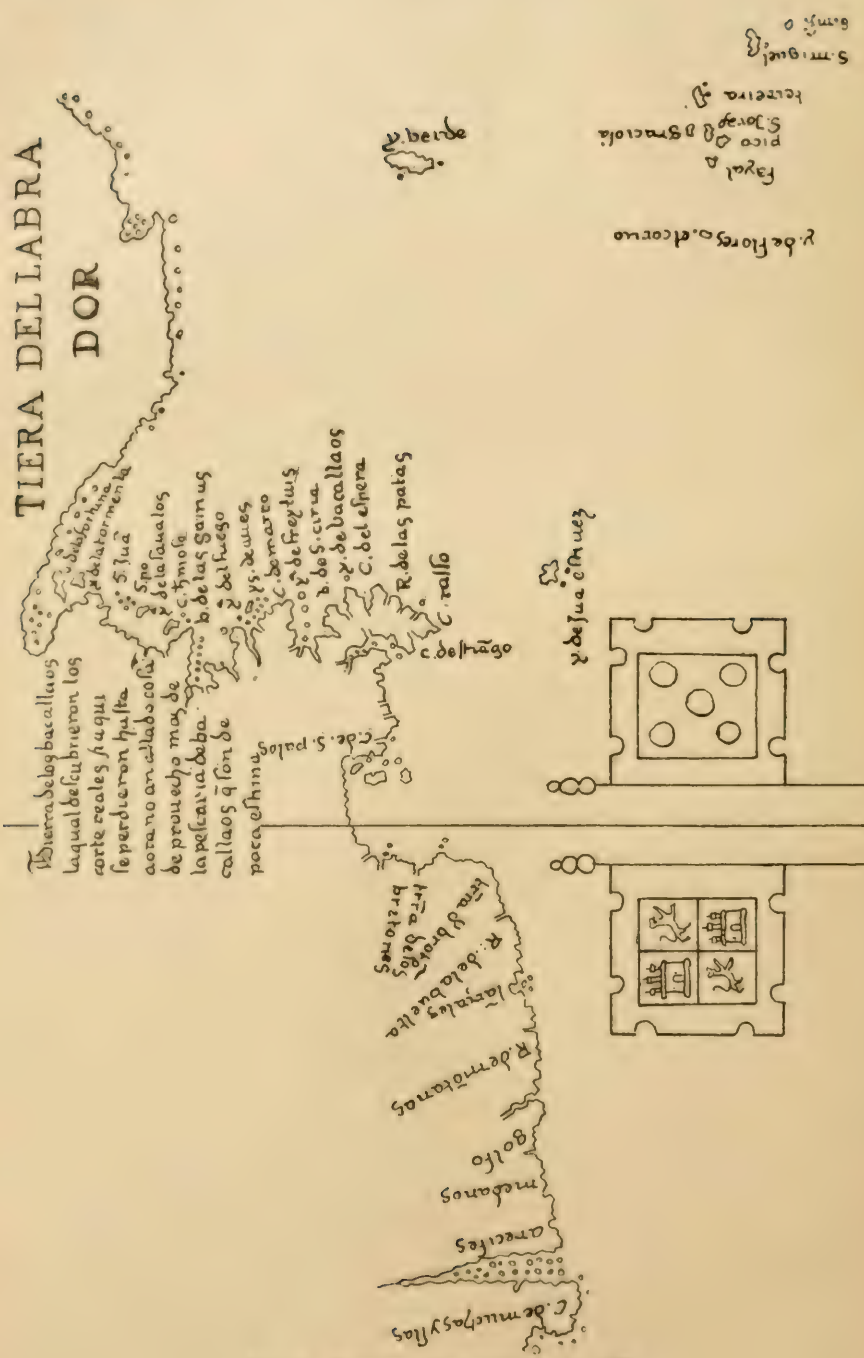

FIG. 3. RIBEIRO, SPANISH. A. D. 1527.

The second point of our inquiry, namely, where upon our coast did those old navigators think that the line touched? cannot be found mathematically, for it would seem from these calculations on "spheres" that the same result is reached from widely different data. That method is plainly inapplicable. It is necessary, therefore, to turn to the maps of the period—those maps which, mathematically measured, will mislead the student; but which will yield valuable information to whoever will read them in the light of their own age. The topographical features upon them will show within a very small distance the place where the line of Tordesillas touched our coast—in the current opinion of the period when the people were alive who had the practical settlement of it.

The Spanish view is set forth in two maps, both copied from the official map of Spain. One is by Diego Ribeiro and is dated A.D. 1529, the other is dated A.D. 1527, and has been ascribed to Fernan Columbus, but Mr. Harrisse thinks it to be the work of Nuno Garcia de Toreno. Mr. Harrisse has the greater probability on his side; but it makes little difference, since both Ribeiro and Garcia were celebrated pilots and were among the experts on behalf of Spain at the Badajoz conference. Both of them were distinguished chart makers and Ribeiro was one of the commissioners for compiling and supervising the standard map—(Padron Real). Fig. 3 is an extract from the well known map at Weimar made by him. The two flags are on the South American coast

FIG. 4. NUNO GARCIA, SPANISH, A. D. 1527.

and have been moved up and included in this extract to show how the line is marked on the map—the Portuguese to the east and the Spanish to the west of the dividing line between them. The reader's attention is called to the fact that the line cuts the coast far west of Cape Race and westward of the islands on the south coast of Newfoundland. It passes west of nearly the whole region of Baccallaos and just clears what may be taken as Nova Scotia and the point of Cape Breton. It corresponds as nearly as possible to the meridian of 60° W. on our charts which passes through Cabot Strait close to the island of St. Paul.

Fig. 4 is an outline extract of the map by Nuno Garcia, or Fernan Columbus. It is traced from Winsor's *Narr. and Crit. History,* Vol. II, p. 43. In this map the opening between Cape Breton and Newfoundland is indicated, as it is also on earlier maps, and the line of demarcation passes through it. These two maps are conclusive evidence that, on the Spanish official map, the division was close to the point of Cape Breton and cut off all Newfoundland into the Portuguese demarcation. That then was the Spanish view of the question, and it is important to remember that the true longitude of the line has been shown to be 45° 40′. The longitude, therefore, on both these maps is 14° 20′ out of the truth ; so far as that part of the coast is concerned.

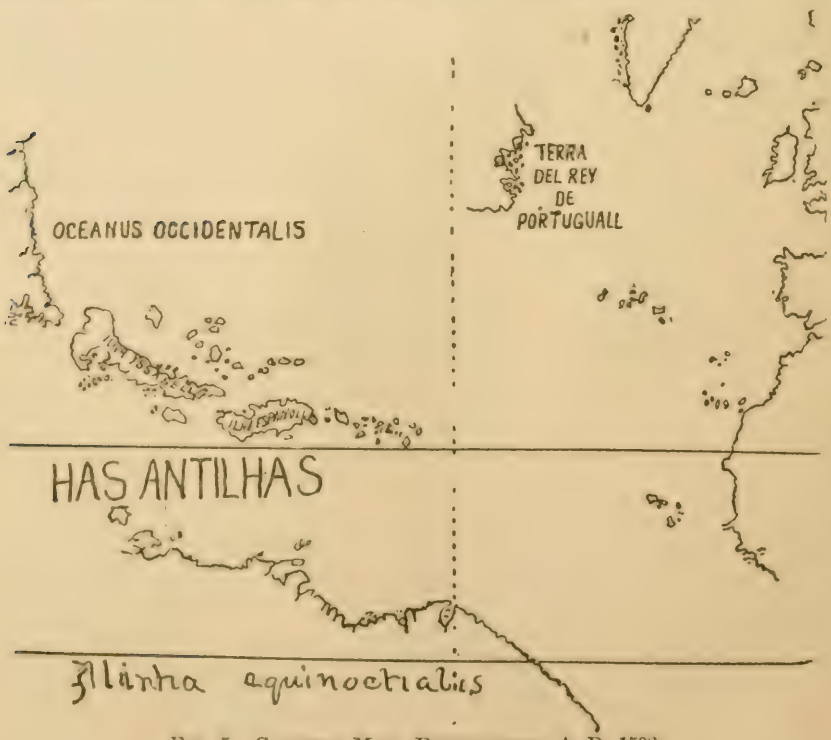

Fig. 5. Cantino Map, Portuguese, A. D. 1502.

Turning now to the other side, there will be found only two maps of undoubted Portuguese origin in which the line is shown. The first in order of date is the Cantino map of A.D. 1502, which has been beautifully reproduced in Mr. Harrisse's work on the *Corte Reales.* Fig. 5 is an outline tracing of a portion of this map. The coast of America at that early date is not continuous and much distorted; but it is plainly manifest that the dotted line on the sketch, representing the dividing line, passes far west of Cape Race and cuts off all of Newfoundland to the east. This map, therefore, concurs with the Spanish maps above cited. The longitude of this map is, therefore, just as erroneous (and no more so) as that of the Spanish maps, and it will also be observed that every one of the Antilles is north of the tropic of Cancer; whereas, in reality, every one of them lies to the south of it. The latitude, therefore, of that part of the map is from eight to ten degrees out of the truth.

Fig. 6 is the second Portuguese map referred to above. It is anonymous and undated; but all authorities agree in assigning it to A.D. 1514-1520. The extract given is taken from Kohl and in it we have the most indubitable corroboration of the indications upon the three maps previously cited. The line is seen to cut off Baccalaos to the east. It just grazes the point of Nova Scotia and passes to the north at the precise point where Cabot Strait opens up in the rear of Newfoundland.

Here, then, we have a most striking record of concurrence, between the Spanish and Portuguese authorities, as to where, in their opinion, the line of Tordesillas cut our coast. We are not called upon to perform elaborate mathematical calculations upon imaginary worlds of different sizes and everyone of them wrong, nor to measure distances in leagues of various lengths or in degrees of different great circles, containing from 56 to 87 miles each. The opinion current at the time, which was the subject of our second question, is set forth graphically beyond possibility of doubt. As I have urged in previous papers, Cape Race is the cardinal point of the geography of the northeast coast of America, and always has been. The very same name has clung to it since A.D. 1502, and, in all the four cartographical witnesses above cited, the line passes at an approximately similar distance west of it. If then the question be asked, where the line of Tordesillas really was? I would reply, at 45° 40′ W. on our maps; but if the question be—where did the Spaniards and Portuguese suppose it to be? I should answer—close to the west of the meridian of 60° on our maps.

I have called attention to the fact that these old maps are very erroneous as to longitude; and sometimes as to latitude also. How

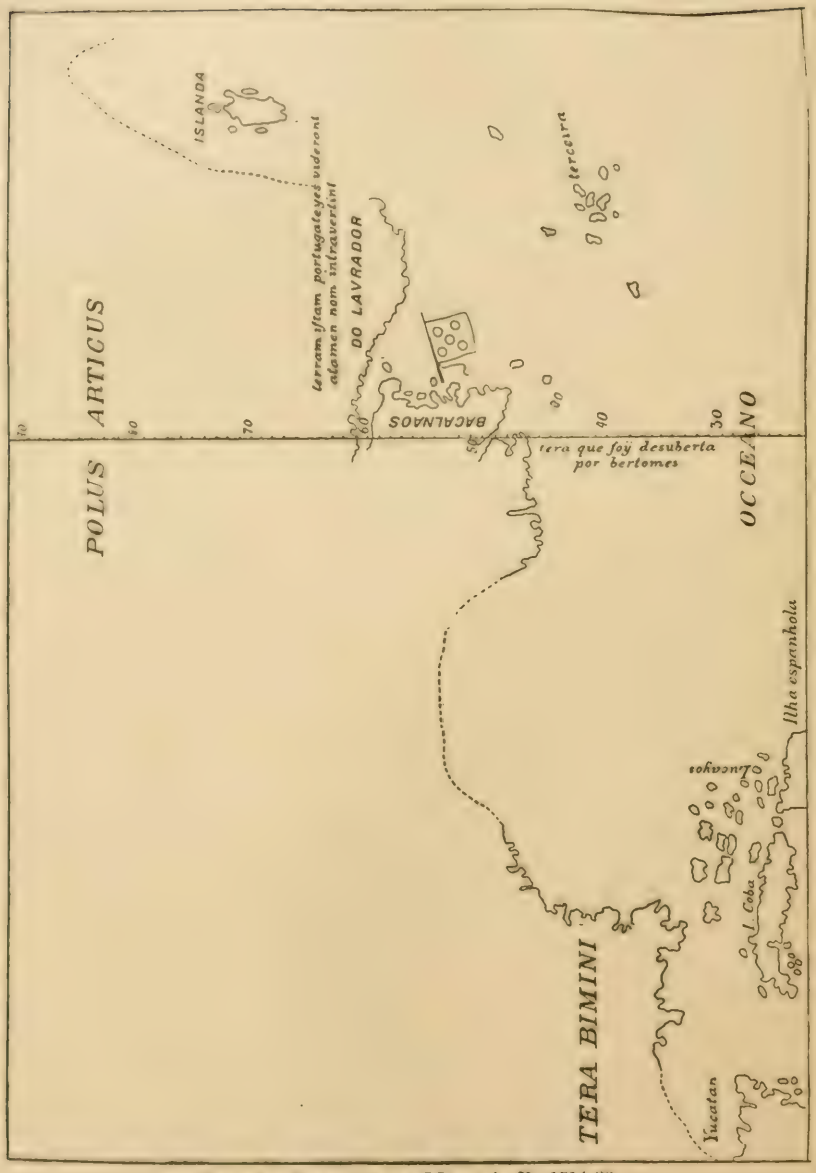

FIG. 6. PORTUGUESE MAP, A. D. 1514-20.

could they possibly be correct when the old navigators had no means of correcting their dead reckoning? Hence it was that, in measuring their course south and east to the Moluccas round the Cape of Good Hope and over the Indian Ocean, their estimations of longitude differed by as much as forty-six degrees. If, as has been stated above, the Mediterranean Sea, which washed their feet from childhood, was always laid down twenty degrees too long, ought it to be cause for wonder if, across the unquiet western ocean, their longitude was fifteen degrees in error?

Elsewhere, I have endeavoured to point out the injustice to the memory of Sebastian Cabot in calling him false and venal for changing his service, as did so many of the great sailors of those days without blame. The concurrence of the line of partition on these maps clears the memory of that most daring of sailors, Corte Reale, from the charge of "wantonly" inscribing Newfoundland on his maps "as within the "dominions of Portugal." He did not make the Cantino map, and, if that map was based on his information, the information is confirmed by the Spanish maps twenty-five years later. Nor can it be said that the Spanish cartographers were misled by him; for their maps were based on the reports of Estevan Gomez, who spent ten months along the east coast of America in A.D. 1525.

There are also very weighty historical reasons which confirm the above conclusion as to the point of contact between the two spheres of influence. When John Cabot was preparing to sail to the west, King Ferdinand, in a letter to De Puebla (March 28, 1496), objected to the expedition as being in prejudice to "our rights or those of the King of "Portugal." Afterwards, in A.D. 1511, the King's orders to Juan de Agramonte, relative to Cabot, manifest a doubt as to which side of the line the discovery was on. He was ordered to take Breton pilots; thus clearly indicating the locality to be in the "Bay of the Bretons," in the region marked on the Portuguese chart Fig. 6, as "the land discovered by the Bretons;" and he is to make a settlement there, *without infringing on the rights of Portugal.* This last condition confirms the maps that the point of contact was in the King's opinion near the spot of Cabot's discovery as laid down subsequently in Sebastian Cabot's map of 1544.

Again, in A.D. 1541, when Spanish spies reported the preparations for Roberval's proposed settlement, the Spanish ambassador at Lisbon endeavoured to incite the King of Portugal to send an expedition to destroy these French interlopers. The King replied that he knew where the French were going and that it was in his territory; but he declined to take action because they could do him no harm there, and

he thought, moreover, the expedition would fail. The ambassador then addressed himself to the queen, who was devoted to the interests of the Emperor Charles V., and even suggested that, if the King would not defend his territories, they should be ceded to the Emperor who would take care of them. This expedition was to sail through Cabot Strait and make a settlement within it.

The grant of the King of Portugal in 1521 to Joam Alvarez Fagundez was for the territory "from the line of demarcation on the "south to the boundaries of the land discovered by Corte Reale on the "north," and, if the map of Lazaro Luis of A.D. 1563 is to be accepted as evidence of a grant forty years before, it would seem that a part of the peninsula of Nova Scotia was considered to be within the Portuguese line.

We may, therefore, feel sure, both on cartographical and historical grounds, that although the line of demarcation, according to the light of the astronomical science of the present day, would pass away out to sea seven degrees westward of this continent, yet as between Spain and Portugal, it was acknowledged to cut the coast of Nova Scotia and that Portugal by right of prior occupation might have held the territory of Baccallaos as against Spain. By right of discovery England's claim was prior to all; for John Cabot touched the main continent in 1497. The point where he touched is indicated by the instructions of Ferdinand to Juan de Agramonte above cited. It was close to the line of demarcation and, on the map of Sebastian Cabot of 1544, it was at Cape Breton. This last point has been sufficiently elucidated by the present writer in previous papers in these *Transactions*. It only remains to observe that converging lines of inquiry concentrate the interest of geographical historians upon that point of the northeast coast of Nova Scotia. Those who seek for mathematical demonstration in history will lose their labour. The subject matter admits of probable proof alone. Even if the probability should amount to moral certainty, its intrinsic nature will be the same. An erroneous quantity propounded to a calculating machine can produce nothing but an erroneous result and hypotheses worked out by mathematical tables acquire no higher probability on that account. The tendency is in the reverse direction.

NOTES.

1 Maine—Ancient Law, p. 101.
2 Cicero—de Legibus, Bk. ii, chap. 4.
3 Bryce—Holy Roman Empire, p. 244.
4 Maine—Ancient Law, p. 249.
5 St. Augustine—de Civitate Dei, xvi., 5.
6 Harrisse—Diplomatic History, p. 76.
7 Lingard—History of England, vol. 2, p. 178.
8 Harrisse—Diplomatic History, p. 17.
9 André—Manuel de Droit Canon, *ad verb.*
10 Harrisse—Diplomatic History, p. 18.
11 Harrisse—Diplomatic History, p. 19.
12 Harrisse—Diplomatic History, *ib.*
13 Harrisse—Diplomatic History, *ib.*
14 This *Campo di Fiori* is the place indicated at p. 51 *Diplomatic History* as "the Floral Field." It is an open space off the Piazza Navona where acts of public proclamation were made.
15 Humboldt—Examen Critique, III., p. 52 *note.*
16 Humboldt—Cosmos, II., p. 657.
17 It is impossible to make references to all the authorities from whence the conclusions of this chapter have been drawn. Many are cited in the text. Among those not so mentioned are Humboldt, *Cosmos* and *Examen Critique ;* Bunbury, Ancient Geography; Beasley, Dawn of Modern Geography; Smith, Dictionary of Greek and Roman Antiquities and other works of the same class ; Bulletin de la Société de Géographie ; articles by D'Avezac and Varnhagen.

APPENDIX A.

THE BULL OF DEMARCATION (C) OF MAY 4, 1493 (INTER CETERA), COLLATED WITH THE SUPPRESSED DRAFT (A) OF MAY 3.

The following is a copy of the Bull as found in the *Fonti Italiani*, Part III. of the series of volumes issued by the *Reale Commissione Colombiana*, Rome, 1894. Those words which were not in the unpromulgated Bull and were inserted to bring it to its final form, as published, are printed in italics. The words in the draft which were omitted in the final Bull are printed in the footnotes with references to their original places in the text.

ALEXANDER episcopus, servus servorum Dei, carissimo in Christo filio Ferdinando regi et carissimæ in Christo filiæ Helisabeth reginæ Castellæ, Legionis, Aragonum, *Siciliae* et Granatæ illustribus, salutem et apostolicam benedictionem. Inter cetera divinæ majestati beneplacita opera et cordis nostri desiderabilia illud profecto potissimum existit, ut fides catholica et christiana religio nostris præsertim temporibus exaltetur ac ubilibet amplietur et dilatetur, animarumque salus procuretur, ac barbaræ nationes deprimantur et ad fidem *ipsam*[1] reducantur. Unde cum ad hanc sacram Petri Sedem, divina favente clementia, meritis licet imparibus, evocati fuerimus, cognoscentes vos tanquam veros catholicos reges et principes, quales semper fuisse novimus, et a vobis præclare gesta toti pene jam orbi notissima demonstrant, ne dum id exoptare, sed omni conatu, studio et diligentia, nullis laboribus, nullis impensis nullisque parcendo periculis, etiam proprium sanguinem effundendo, efficere, ac omnem animum vestrum omnesque conatus ad hoc jam dudum dedicasse, quemadmodum recuperatio regni Granatæ a tyrannide Saracenorum hodiernis temporibus per vos cum tanta divini nominis gloria facta, testatur ; digne ducimur non immerito et debemus illa vobis *etiam* sponte et favorabiliter concedere, per quæ hujusmodi sanctum et laudabile ac immortali Deo Acceptum propositum in dies ferventiori animo, ad ipsius Dei honorem et imperii christiani propagationem prosequi valeatis. Sane accepimus quod vos, qui dudum animo proposueratis aliquas insulas et terras *firmas* remotas et incognitas ac per alios hactenus non repertas quærere et invenire, ut illarum incolas et habitatores ad colendum Redemptorem nostrum et fidem catholicam profitendam reduceretis, hactenus in expugnatione et recuperatione ipsius regni Granatæ plurimum occupati, hujusmodi sanctum et laudabile propositum vestrum ad optatum finem perducere nequivistis. Sed tandem, sicut Domino placuit, regno prædicto recuperato, volentes desiderium adimplere vestrum, dilectum filium Christoforum Colon, *virum utique dignum et plurimum commendandum ac tanto negotio aptum*, cum navigiis et hominibus ad similia instructis, non sine maximis laboribus et periculis ac expensis destinastis, ut terras *firmas et insulas* remotas et incognitas hujusmodi per mare, ubi hactenus navigatum non fuerat, diligenter inquirerent. Qui tandem, divino auxilio, facta extrema diligentia,[2] in mari Oceano navigantes, certas insulas remotissimas et etiam terras firmas, quæ per alios hactenus repertæ non fuerant, invenerunt; in quibus quamplurimæ gentes pacifice viventes et, ut asseritur, nudi incedentes, nec carnibus vescentes, inhabitant ; et, ut præfati nuntii vestri possunt opinari, gentes ipsæ in insulis et terris prædictis habitantes credunt unum Deum creatorem in cœlis esse, ac ad fidem catholicam amplexandum et bonis moribus im-

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1 Insert Christianam.

2 Insert, per partes occidentales ut dicitur, versus Indos.

buendum satis apti videntur; spesque habetur quod, si erudirentur, nomen salvatoris domini nostri Yhesu Christi in terris et insulis prædictis facile induceretur. Ac præfatus Christoforus in una ex principalibus insulis prædictis jam unam turrim satis munitam, in qua certos Christianos, qui secum iverant, in custodiam, et ut alias insulas et terras *firmas* remotas et incognitas inquirerent, posuit, construi et edificari fecit; in quibus quidem insulis et terris jam repertis aurum, aromatha et aliæ quam plurimæ res pretiosæ diversi generis et diversæ qualitatis reperiuntur: unde omnibus diligenter et præsertim fidei catholicæ exaltatione et dilatatione, prout decet catholicos reges et principes, consideratis, more progenitorum vestrorum claræ memoriæ regum, terras *firmas* et insulas prædictas illarumque incolas et habitatores vobis, divina favente clementia, subjicere et ad fidem catholicam reducere proposuistis. Nos igitur hujusmodi vestrum *sanctum* et laudabile propositum plurimum in Domino commendantes, ac cupientes ut illud ad debitum finem perducatur, et ipsum nomen Salvatoris nostri in partibus illis inducatur, hortamur vos plurimum in Domino, et per sacri lavacri susceptionem, qua mandatis apostolicis obligati estis, et viscera misericordiæ domini nostri Yhesu Christi attente requirimus, ut cum expeditionem hujusmodi omnino prosequi et assumere prona mente orthodoxæ fidei zelo intendatis, populos in hujusmodi insulis *et terris* degentes ad christianam *religionem*[1] suscipiendam inducere velitis et debeatis, nec pericula, nec labores ullo unquam tempore vos deterreant, firma spe fidutiaque conceptis quod Deus omnipotens conatus vestros feliciter prosequetur. Et ut tanti negotii provintiam, apostolicæ gratiæ largitate *donati*,[2] liberius et audatius assumatis, motu proprio, non ad vestram vel alterius pro vobis super hoc nobis oblatæ petitionis instantiam, sed de nostra mera liberalitate et ex certa scientia ac de apostolicæ potestatis plenitudine, *omnes*[3] *insulas et terras firmas inventas et inveniendas, detectas et detegendas, versus occidentem et meridiem, fabricando et constituendo unam lineam a polo artico, scilicet septemtrione, ad polum antarticum, scilicet meridiem, sive terrae firmae et insulae inventae et inveniendae sint versus Indiam aut versus aliam quamcumque partem: quae linea distet a qualibet insularum quae vulgariter nuncupantur de los Azores et Caboverde centum leucis versus occidentem et meridiem, ita quod omnes insulae et terrae firmae repertae et reperiendae, detectae et detegendae, a praefata linea versus occidentem et meridiem per alium regem aut principem christianum non fuerint actualiter possessae usque ad diem nativitatis domini nostri Yhesu Christi proxime praeteritum, a quo incipit annus praesens MCCCCLXXXX. tertius, quando fuerint per nuntios et capitaneos vestros inventae aliquae praedictarum insularum,* auctoritate omnipotentis Dei nobis in beato Petro concessa ac vicariatus Yhesu Christi qua fungimur in terris, cum omnibus illarum dominiis[4] civitatibus, castris, locis et villis, juribusque et jurisdictionibus ac pertinentiis universis, vobis hæredibusque et successoribus vestris, Castellæ et Legionis regibus, in perpetuum tenore præsentium, donamus, concedimus, et assignamus, vosque et hæredes ac successores præfatos illarum dominos cum plena[5] libera et omnimoda potestate, auctoritate et jurisdictione facimus, constituimus et deputamus; decernentes nihilominus per hujusmodi donationem, concessionem *et* assignationem[6] nostram nulli christiano principi, *qui actualiter praefatas insulas aut terras firmas possederit usque ad praedictum diem nativitatis domini nostri Yhesu Christi*, jus quæsitum, sublatum intelligi posse aut auferri debere. Et insuper mandamus vobis, in virtute sanctæ obedientiæ ut, sicut etiam pollicemini, et non dubitamus pro vestra maxima devotione et regia magnanimitate vos esse facturos, ad terras *firmas* et insulas prædictas viros probos et Deum timentes, doctos, peritos et expertos ad instruendum incolas et habitatores præfatos in fide catholica et in bonis moribus imbuen-

[1] Substitute, professionem (for religionem).
[2] Substitute, donatis (for donati).
[3] Substitute, et singulas terras et insulas prædictas sic incognitas et hactenus per nuncios vestros repertas et reperiendas in posterum quæ sub dominio actuali temporali aliquorum dominorum Christianorum constitutæ non sint.
[4] Insert, cum.
[5] Insert, auctoritate apostolica.
[6] Insert, de illis investimus, illarumque.
[7] Insert, et.
[8] Insert, et investituram.

dum, destinare debeatis, omnem debitam diligentiam in præmissis adhibentes ; ac quibuscumque personis[1] cujuscumque dignitatis, *etiam imperialis et regalis*, status, gradus, ordinis vel conditionis, sub excommunicationis latæ sententiæ pœna, quam eo ipso, si contrafecerint, incurrant, districtius inhibemus, ne ad insulas et terras[2] *firmas inventas et inveniendas, detectas et detegendas, versus occidentem et meridiem, fabricando et constituendo lineam a polo artico ad polum antarticum, sive terrae firmae et insulae inventae et inveniendae sint versus Indiam aut versus aliam quamcumque partem, quae linea distet a qualibet insularum quae vulgariter nuncupantur de los Azores et Caboverde centum leucis versus occidentem et meridiem, ut praefertur*, pro mercibus habendis vel quavis alia de causa accedere præsumant absque vestra ac hæredum et successorum vestrorum prædictorum licentia speciali ; [3] non obstantibus constitutionibus et ordinationibus apostolicis[4] ceterisque contrariis quibuscumque; in illo a quo imperia et dominationes ac bona cuncta procedunt, confidentes, quod dirigente Domino actus vestros, si hujusmodi sanctum et laudabile *propositum*[5] prosequamini, brevi tempore, cum felicitate et gloria totius populi christiani, vestri labores et conatus exitum felicissimum consequentur. Verum, quia difficile foret præsentes litteras ad singula quæque loca in quibus expediens fuerit deferri, volumus, ac motu et scientia similibus decernimus, quod illarum transumptis, manu publici notarii inde rogati subscriptis et sigillo alicujus personæ in ecclesiastica dignitate constitutæ, seu curiæ ecclesiasticæ, munitis, ea prorsus fides in juditio et extra ac alias ubilibet adhibeatur, quæ præsentibus adhiberetur, si essent exhibitæ vel ostensæ. Nulli ergo omnino hominum liceat hanc paginam nostræ *commendationis*, hortationis, requisitionis, donationis, concessionis, assignationis,[6] constitutionis, deputationis, *decreti*, mandati, inhibitionis[7] *et* voluntatis,[8] infringere, vel ei ausu temerario contraire. Si quis autem hoc attentare præsumpserit, indignationem omnipotentis Dei ac beatorum Petri et Pauli apostolorum ejus se noverit incursurum.

Datum Romæ, apud sanctum Petrum, anno incarnationis dominicæ MCCCCLXXXXIII. quarto nonas maii, pontificatus nostri anno primo.

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[1] Insert, etiam.

[2] Insert, præditas postquam per vestros nuntios seu ad id missos inventæ et receptæ fuerint.

[3] Insert—Et quia etiam nonnulli Portugalliæ reges in partibus Africæ, Guineæ et Mineræ auri alias insulas, similiter, etiam ex concessione apostolica eis facta repererunt et acquisiverunt et per sedem apostolicam eis diversa privilegia, gratiæ, libertates, inmunitates, exentiones et indulta concessa fuerunt. Nos, vobis ac hæredibus et subcesoribus vestris præditis, ut insulis et terris per vos repertis, et reperiendis hujusmodi, omnibus et singulis gratiis, privilegiis, exentionibus libertatibus facultatibus, immunitatibus et indultis hujusmodi, quorum omnium tenores ac si de verbo ad verbum præsentibus insererentur, haberi volumus pro sufficienter expressis et insertis, uti, potiri et gaudere libere et licite possitis ac debeatis in omnibus et per omnia, perinde ac si vobis ac hæredibus et subcessoribus prædictis specialiter concessa fuissent, motu, auctoritate, scientia, et apostolicæ potestatis plenitudine similibus, de specialis dono gratiæ, indulgemus, illaque in omnibus et per omnia ad vos hæredes ac subcessores vestros prædictos extendimus pariter et ampliamus.

[4] Insert—Nec non omnibus illis, quæ in litteris desuper editis concessa sunt non obstare.

[5] Substitute, negotium (for propositum).

[6] Insert, investituræ, facti.

[7] Insert, indulti extensionis, ampliationis.

[8] Insert, et decreti.

TRANSLATION.

Alexander, Bishop, Servant of the Servants of God, to his very dear son in Christ, Ferdinand, King, and to his very dear daughter in Christ, Isabella, Queen, illustrious, of Castile, Leon, Aragon, Sicily, Granada, health and apostolic benediction. Among the works most acceptable to the Divine Majesty, and desirable to our hearts, that is certainly above all, that the Catholic faith, and the Christian religion, especially in our times, should be exalted and everywhere diffused and spread; and that the salvation of souls be sought after, and barbarous nations subjected, and brought over to the said faith. Wherefore We, having been elevated, by the favour of divine clemency, although undeserving by our merits of so high a rank, to this sacred seat of Peter, acknowledging you, as true catholic Kings and Princes, whom we have always known as such and as your most illustrious actions now made known to all the world shew, not only that you are desirous of that, but that you likewise prosecute it with all vigour, earnestness, and diligence, sparing no fatigue, expense, or danger whatever, even to the shedding of your blood, and that it is long since you have dedicated all your mind and all your efforts to it, as the recovery of the kingdom of Granada from the tyranny of the Saracens, recently effected by you, with such evident proofs of divine favour, clearly shews; we deem it, therefore, worthy of us, and are bound to grant you even spontaneously and graciously, those things, by which you may be enabled more fervently to follow up this holy and praiseworthy resolution, and acceptable to the eternal God, to the honour of God, and for the propagation of the Christian empire. And in truth it has come to our knowledge, that you, who had resolved in your minds, for some time past, to seek for and discover some remote and unknown islands and main-lands, and by no others hitherto found out, in order to induce the natives and inhabitants of them to worship our Redeemer and to profess the Catholic faith, but had not until now been able to conduct this holy and praiseworthy resolution to its wished-for end, finding yourselves fully engaged in the conquest and recovery of the said kingdom of Granada ; but at length, as it pleased the Lord, having recovered the foresaid kingdom, and wishing to fulfil your desires, you despatched our beloved son Christopher Columbus, a man every way worthy and deserving of great praise, and capable of so great an affair, with vessels and men accustomed to such undertakings, with very great labour, danger and expense, in order that he might diligently seek out those main-lands and remote and unknown islands, in a sea where no person had navigated until now. Who, at last, with the assistance of God, having used extreme diligence, in navigating through the ocean, discovered certain very remote islands, and also main-lands, that nobody had as yet found out; the inhabitants of which are numerous, live peacefully, and, as it is affirmed, go naked, and feed not upon flesh; and as far as your foresaid messengers can opine, the people who inhabit the foresaid islands and lands, believe that there is in heaven a God Creator ; and appear well disposed to embrace the Catholic faith, and civilized manners; and there is a hope, that if they were instructed, the name of our Lord and Saviour Jesus Christ would be introduced into the said lands and islands. And already the said Christopher has caused to be constructed and built in one of the principal of the foresaid islands, a very strong tower, in which he placed certain Christians, who went out with him, in order that they might have the care of it, and likewise discover other remote and unknown islands and continents. In which islands and lands already discovered, are to be found, gold, spices, and a great many other precious things of divers kinds and qualities. Whence, having diligently considered all these things, and especially the advancement and spreading of the Catholic faith, as it becomes Catholic Kings and Princes, you have resolved, in imitation of the Kings your ancestors of renowned memory, with the favour of the divine clemency, to subject and reduce to the Catholic faith the foresaid main-lands and islands, and the natives and

inhabitants of the same. We therefore, highly commending in the name of God your holy and laudable resolution, and wishing that it may be conducted to the desired end, and the name of our Saviour introduced into those parts, exhort you warmly in the Lord, and by the holy baptism you have received, by which you subjected yourselves to the apostolic commands, and by the bowels of the mercy of our Lord Jesus Christ, earnestly intreat you to proceed in taking up and prosecuting completely this expedition, the zeal for the orthodox faith continuing in you, you will and ought to induce the people, who inhabit the foresaid islands and continents, to embrace the Christian religion; nor let the dangers and fatigues of it ever deter you, possessing the firmest hope and confidence, that God omnipotent will happily accompany all your undertakings. And in order that you may undertake more freely and boldly the charge of so great an affair, given to you with the liberality of apostolic grace, We of our own motion, and not at your solicitation, nor upon petition presented to Us upon this subject by other persons in your name, but of our pure free will and certain knowledge, and with the plentitude of apostolic power, by the authority of God omnipotent granted to Us through blessed Peter, and of the vicarship of Jesus Christ, which we exercise upon earth, by the tenor of the presents give, concede, and assign for ever to you, and to the kings of Castile and Leon, your successors, all the islands and main-lands discovered and which may hereafter be discovered, towards the west and south, with all their dominions, cities, castles, places, and towns, and with all their rights, jurisdictions, and appurtenances, whether the lands and islands found or that shall be found, be situated towards India, or towards any other part whatsoever; and we make, constitute and depute you, and your foresaid heirs and successors, lords of them, with full, free and absolute power and authority and jurisdiction : drawing however and fixing a line from the arctic pole, viz from the north, to the antarctic pole, viz to the south; which line must be distant from any one of the islands whatsoever, vulgarly called the Azores, and Cape de Verd Islands, a hundred leagues towards the west and south ; upon condition that no other Christian King or Prince has actual possession of any of the islands and main-lands found or that shall be found, discovered or that shall be discovered from the foresaid line towards the west and south, until the day of the nativity of our Lord Jesus Christ last past, from which the present year one thousand four hundred and ninety-three commences, when some of the foresaid islands were discovered by your messengers and captains: decreeing nevertheless, that by this our donation, concession and assignation, it is not intended to take or deprive of the *jus quæsitum*, any other Christian Prince, who may have actually possessed the said islands and main-lands up to the aforementioned day of the nativity of our Lord Jesus Christ. And moreover, we command you, by the holy obedience which you owe us, that (as you promise, and we doubt not you will perform it, in consequence of your very great devotion, and royal magnanimity) you appoint to the said main-lands and islands upright men and fearing God, learned skilful and expert in instructing the foresaid natives and inhabitants in the Catholic faith, and in teaching them good morals, employing for that purpose all requisite diligence. And we most strictly forbid every person whatsoever, and of whatsoever dignity, (even imperial or royal,) state, degree, order, or condition they may be, under the penalty of excommunication *latæ sententiæ*, which they will incur by the very fact of transgression, to presume, either for trafficking, or for any other cause whatsoever, to approach, without special licence from you, and your foresaid heirs and successors, the islands and main-lands found, or that shall be found, discovered or that shall be discovered, towards the west and south, drawing and fixing a line from the arctic to the antarctic pole ; whether the main-lands and islands found, or that shall be found, be towards India, or towards any other part; which line must be distant from any one of the islands whatsoever, which are vulgarly called the Azores, and Cape de Verd, a hundred leagues towards the west and south, as has been said : notwithstanding the apostolic constitutions and ordinances, and all other things to the contrary whatsoever. We confide in Him, from whom empires,

dominions and all good things proceed, that the Lord directing your actions, if you prosecute this holy and praiseworthy resolution, in a short time, for the happiness and glory of the whole Christian world, your labours and your efforts will obtain a most happy accomplishment. But, as it would be a difficult thing to present the present letters in each of the places where it might be requisite, we will and decree, of our own similar motion and knowledge, that the copies of them, signed by a public notary, employed for that purpose, and provided with the seal of some person possessed of ecclesiastical dignity, or a member of the ecclesiastical court, be regarded as equally valid in all respects in courts of justice and without, and everywhere else, as if the present letters were exhibited or shewn. Let no person therefore presume to infringe, or with rash boldness to contravene this page of our commendation, exhortation, requisition, donation, concession, assignation, constitution, deputation, decree, mandate, inhibition, and will. For if any person presumes to do so, be it known to him that he will incur the indignation of the Almighty God, and of the blessed apostles Peter and Paul. Given in Rome, at St. Peter's, in the year of the incarnation of our Lord, one thousand four hundred and ninety-three, on the fourth day of May, in the first year of our Pontificate. *Gratis.* (The signatures follow.)

APPENDIX B. (BULL B).

The following is a copy of the Bull "*Eximiae devotionis*" taken from the "*Fonti Italiani,*" Part III. By this Bull the Pope granted to Spain, over the territories discovered for the Spanish crown, the same rights which had, by a series of Bulls extending over fifty years, been granted to Portugal over the territories to the south along the coast of Africa and to the eastwards "as far as the Indies." Such rights are conferred upon Spain *en bloc* without enumeration *quoad the territories discovered for Spain* and in doing this the rights of Portugal and the contents of the previous Bulls are of necessity confirmed, *quoad* the territories discovered for Portugal.

This Bull is to be found also in Solorzano, *De Indiarum Jure,* and in Rainaldi, *Annales Ecclesiastici.* It is not in Navarrete, nor is it often referred to in the books; though Herrera in one passage evidently has it in mind, and Barros refers to it. Mr. Harrisse says it is not now to be found in the Spanish Archives. He has given (Diplomatic History) the only English translation which has hitherto appeared. His text was taken from Heywood's *Documenta Selecta.* He thinks Rainaldi gave this Bull a place before the Bull *Inter cetera* by mistake; but Rainaldi made no mistake. This Bull is dated May 3, and Rainaldi never knew of the suppressed *Inter cetera* draft of the same day. He gave the only *Inter cetera* he knew anything about, that dated May 4.

The reader is requested to compare the passages omitted from the draft Bull and given in the footnotes in appendix A with the passages printed in italics in this Bull. He will find that they are almost word for word the same, and all that remains in the Bull beyond this is merely the technical framework of formal verbiage always found in such documents.

ALEXANDER episcopus, servus servorum Dei, carissimo in Christo filio Ferdinando regi et carissimæ in Christo filiæ Helisabeth reginæ Castellæ, Legionis, Aragonum et Granatæ illustribus, salutem et apostolicam benedictionem.

Eximiæ devotionis sinceritas et integra fides, quibus nos et Romanam reveremini Ecclesiam, non indigne merentur ut illa vobis favorabiliter concedamus, per quæ sanctum et laudabile propositum vestrum et opus inceptum in quærendis terris et insulis remotis ac incognitis in dies melius et facilius ad honorem omnipotentis Dei, et imperii christiani propagationem, ac fidei catholicæ exaltationem prosequi valeatis. Hodie siquidem omnes et singulas terras firmas et insulas remotas et incognitas versus partes occidentales et mare Oceanum consistentes, per vos, seu nuntios vestros, ad id propterea non sine magnis laboribus, periculis et impensis destinatos, repertas et reperiendas in posterum, quæ sub actuali dominio temporali aliquorum dominorum christianorum constitutæ non essent, cum omnibus illarum dominiis, civitatibus, castris, locis, villis, juribus et jurisdictionibus universis, vobis hæredibusque et successoribus vestris, Castellæ et Legionis regibus, in perpetuum, motu proprio et ex certa scientia ac de apostolicæ potestatis plenitudine donavimus, concessimus et assignavimus, prout in nostris inde confectis litteris plenius continetur. *Cum autem alias nonnullis Portugalliae regibus qui in partibus Africae, Guineae et Minere auri, ac alias insulas etiam in similibus concessione et donatione apostolica eis facta repererunt et acquisiverunt, per Sedem apostolicam diversa privilegia gratiae, libertates, immunitates exemptiones, facultates, litterae et in-*

dulta concessa fuerint; nos volentes etiam, prout dignum et conveniens existit, vos hæredesque et successores vestros prædictos non minoribus gratiis, prærogativis, et favoribus prosequi, motu simili, non ad vestram vel alterius pro vobis super hoc oblatæ petitionem instantiam, sed de nostra mera liberalitate ac eisdem scientia et apostolicæ potestatis plenitudine, *vobis ac haeredibus et successoribus vestris praedictis, ut in insulis et terris per vos seu nomine vestro hactenus repertis hujusmodi et reperiendis in posterum omnibus et singulis gratiis, privilegiis, exemptionibus, libertatibus, facultatibus, immunitatibus, litteris et indultis regibus Portugalliae concessis hujusmodi, quorum omnium tenores ac si de verbo ad verbum praesentibus insererentur haberi volumus pro sufficienter expressis et insertis, uti, potiri et gaudere libite et licite possitis et debeatis in omnibus et per omnia perinde ac si illa omnia vobis et haeredibus et successoribus vestris praefatis specialiter concessa fuissent, auctoritate apostolica tenore praesentium de spetialis dono gratiae indulgemus, illaque in omnibus et per omnia ad vos haeredesque ac successores vestros praedictos extendimus pariter et ampliamus,* ac eisdem modo et forma perpetuo concedimus, non obstantibus constitutionibus et ordinationibus apostolicis, nec non omnibus illis quæ in litteris Portugalliæ regibus concessis hujusmodi concessa sunt, non obstantibus ceterisque contrariis quibuscumque. Verum, quia difficile foret præsentes litteras ad singula quæque loca in quibus expediens fuerit defferri, volumus, ac motu et scientia similibus decernimus, quod illarum transumptis, manu publici notarii inde rogati subscriptis et sigillo alicujus personæ in ecclesiastica dignitate constitutæ, seu curiæ ecclesiasticæ, munitis, ea prorsus fides indubia in juditio et extra ac, alias ubilibet adhibeatur, quæ præsentibus adhiberetur, si essent exhibitæ vel ostensæ. Nulli ergo omnino hominum liceat hanc paginam nostræ exhortationis, requisitionis, donationis, assignationis, investituræ, facti, constitutionis, deputationis, mandati, inhibitionis, nostrorum indulti, extensionis, ampliationis, concessionis, voluntatis et decreti infringere, vel ei ausu temerario contraire. Si quis autem hoc attentare presumpserit, indignationem omnipotentis Dei ac beatorum Petri et Pauli apostolorum ejus se noverit incursurum. Datum Romæ, apud sanctum Petrum, anno incarnationis dominicæ millesimo quadringentesimo nonagesimo tertio, quinto nonas maii, pontificatus nostri anno primo.

TRANSLATION.

Alexander, Bishop, Servant of the Servants of God; to the illustrious sovereigns, our very dear son in Christ, Ferdinand, King, and to our very dear daughter in Christ, Isabella, Queen, of Castile, Leon, Aragon and Granada. Health and apostolic benediction.

The sincerity of distinguished devotion and the soundness of faith, by which you reverence us and the Roman Church, justly deserve that we should approvingly grant you those things which may enable to follow up your holy and praiseworthy purpose, and the enterprise undertaken for seeking out remote and unknown lands and islands, day by day tending more to the glory of Almighty God, the propagation of the kingdom of Christ, and the exaltation of the Catholic faith.

Now, therefore, we, of our own motion from certain knowledge and out of the fulness of apostolic power, have given, conceded and assigned unto you, and your heirs and successors, the Kings of Castile and Leon, in perpetuity, all and singular the remote and unknown mainlands and islands, situated towards the regions of the West and the main ocean, which are not under the actual temporal dominion of some Christian master, discovered and to be hereafter discovered, by you or your emissaries sent for that purpose, not without great labour, danger and expense; together with all their lordships, cities, fortresses, places, farms, rights and jurisdictions, as is set forth more fully in our letters drawn up for that purpose.

And since, at other times, divers privileges, favours, liberties, immunities, exemptions, faculties, letters and indults were conceded, by the apostolic See, to several Kings of Portugal, who, in the regions of Africa, Guinea

and the Gold mine, have discovered and acquired other islands, under similar grant and concession made to them by the Apostolic See; we, desiring to bestow, as is worthy and becoming, also upon you and your heirs and successors aforesaid gifts, prerogatives and favours to a not less extent, of our like motion, not at your instance or that of any other person on your behalf by petition made to us about this matter, but of our own simple liberality and with the same knowledge and fulness of apostolic power grant, by apostolic authority according to the tenor of these presents, by a gift of especial grace, to you and your heirs and successors aforesaid, that, in the islands and lands up to the present time discovered by you or in your name and in future to be discovered, you may use, hold and freely enjoy all and singular the gifts, privileges, exemptions, liberties, faculties, immunities, letters and indults as granted to the Kings of Portugal, the purport of all which grants we ordain shall be held expressed and inserted herein, as sufficiently as if they were recited word by word in these presents, and that you may and should lawfully, in all things and in all respects, so hold them as if they had all been specially conceded to you and your heirs and successors aforesaid; and we extend and enlarge them, in all things and all respects, equally to you and your heirs and successors aforesaid, and we grant them, in the same manner and form, in perpetuity; notwithstanding apostolic constitutions and ordinances and all those things which, in the letters granted to the Kings of Portugal, have been so conceded; and notwithstanding all other things to the contrary.

But, since it would be difficult for these letters to be carried to all places which may be expedient, we will and, with like motion and knowledge, decree that to copies of them, signed by the hand of a public notary employed for that purpose and authenticated by the seal of some official person of ecclesiastical dignity or of an ecclesiastical court, the same entire faith shall be given, in courts of justice and outside them and in all other places, which would be given to these presents if they were exhibited or shown.

Therefore, let no man whomsoever infringe this charter of our exhortation, requisition, donation, assignment, investiture, deed, constitution, allotment, concession, will and decree, or, with rash audacity, contravene it. But if anyone should presume to make the attempt, be it known to him that he will incur the indignation of Almighty God and of the blessed apostles Peter and Paul.

Given at Rome, at St. Peter's, in the year of the incarnation of Our Lord, 1493, on the third day of May, in the first year of our pontificate.

APPENDIX C. (BULL D).

Bull said to have been issued by Alexander VI. and dated September 25, 1493, as printed in the "Fonti Italiani." No trace of any original having been found, it was copied into that collection from Solorzano "De Indiarum Jure," Madrid, 1629. The Latin version is supposed to be a re-translation by Solorzano from a Spanish version made by one of the secretaries of Philip II., A.D. 1554.

Alexander episcopus, servus servorum Dei, charissimo in Christo filio Ferdinando regi et charissimæ in Christo filiæ Helizabeth reginæ Castellæ, Legionis, Aragonum et Granatæ, illustribus, salutem et apostolicam benedictionem. Dudum siquidem omnes et singulas insulas et terras firmas inventas et inveniendas versus occidentem et meridiem, quæ sub actuali dominio temporali aliquorum dominorum christianorum constitutæ non essent, vobis heredibusque et successoribus vestris Castellæ et Legionis regibus in perpetuum motu proprio et de certa scientia ac de apostolicæ potestatis plenitudine donavimus, concessimus et assignavimus: vosque ac heredes et successores prefatos de illis investimus; illarumque dominos cum plena, libera et omnimoda potestate, auctoritate et jurisdictione constituimus et deputavimus, prout in nostris inde confectis litteris, quarum tenorem, ac si de verbo ad verbum præsentibus insererentur, haberi volumus pro sufficienter expressis, plenius continetur. Cum autem contingere posset quod nuntii et capitanei aut vassalli vestri versus occidentem et meridiem navigantes, ad partes orientales applicarent, ac insulas et terras firmas, quæ inde fuissent vel essent, reperirent, nos volentes etiam vos favoribus prosequi gratiosis, motu et scientia ac potestatis apostolicæ plenitudine similibus, donationem, concessionem, assignationem et litteras prædictas, cum omnibus et singulis in eisdem litteris contentis clausulis ad omnes et singulas insulas et terras firmas inventas et inveniendas, ac detectas et detegendas, quæ, navigando aut itinerando versus occidentem aut meridiem hujusmodi sint vel fuerint aut apparuerint, sive in partibus occidentalibus vel meridionalibus et orientalibus et Indiæ existant, auctoritate apostolica, tenore præsentium in omnibus et per omnia, perinde ac si in litteris prædictis de eis plena et expressa mentio facta fuisset, extendimus pariter et ampliamus. Vobis et hæredibus et successoribus vestris prædictis per vos, vel alium seu alios, corporalem insularum ac terrarum prædictarum possessionem propria auctoritate libere apprehendendi ac perpetuo retinendi, illasque adversus quoscumque impedientes etiam defendendi, plenam et liberam facultatem concedentes, ac quibuscumque personis etiam cujuscumque dignitatis, status, gradus, ordinis vel conditionis, sub excommunicationis latæ sententiæ, pena, quam contrafacientes eo ipso incurrant, districtius inhibentes, ne ad partes prædictas ad navigandum, pisçandum, vel inquirendum insulas vel terras firmas, aut quovis alio respectu seu colore, ire, vel mittere quoquomodo præsumant, absque expressa vel speciali vestra ac hæredum et successorum prædictorum licentia. Non obstantibus constitutionibus et ordinationibus apostolicis, ac quibusvis donationibus, concessionibus, facultatibus et assignationibus per nos vel prædecessores nostros, quibuscunque, regibus vel principibus, infantibus, aut quibusvis aliis personis, aut ordinibus et militiis de prædictis partibus, maribus, insulis atque terris, vel aliqua eorum parte, ex quibusvis causis, etiam pietatis vel fidei aut redemptionis captivorum, et aliis quantumcunque urgentissimis, et cum quibusvis clausulis etiam derogatoriarum derogatoriis, fortioribus, efficacioribus et insolitis, etiam quascunque sententias, censuras et penas in se continentibus, quæ suum per actualem et realem possessionem non essent sortitæ effectum, licet forsan aliquando illi quibus donationes et concessiones hujusmodi factæ fuissent, aut eorum nuntii, ibidem navigassent. Quos tenores illarum etiam præsentibus pro sufficienter expressis et insertis habentes, motu, scientia et potestatis plenitudine similibus omnino revocamus, ac quoad

terras et insulas per eos actualiter non possessas pro infectis haberi volumus, necnon omnibus illis quæ in litteris prædictis voluimus non obstare, ceterisque contrariis quibuscunque.

Datum Romæ, apud sanctum Petrum, anno incarnationis dominicæ millesimo quadringentesimo nonagesimo tertio. Sexto kalendas octobris, pontificatus nostri anno secundo.

TRANSLATION.

ALEXANDER, Bishop, Servant of the Servants of God, to the illustrious sovereigns, his very dear son in Christ Ferdinand, the king, and to his very dear daughter in Christ, Isabella, the queen of Castile, Leon, Aragon and Granada—Health and apostolic benediction.

Whereas, a while ago, we, of our mere will, certain knowledge and in the fulness of our apostolic power, gave, conceded and assigned, in perpetuity, to you and your heirs and successors, the kings of Castile and Leon, all and singular the islands and mainlands discovered or to be discovered, towards the west and south, which were not under the actual temporal dominion of some Christian master; with these we invest you and your heirs and successors aforesaid; and we have constituted and appointed you as lords of those regions, with full, free and entire power, authority and jurisdiction, as set forth more fully in our letters drawn up for that purpose; the purport of which letters we ordain to be held as completely expressed as if they were recited in these present letters, word for word.

Since, moreover, it may happen that your emissaries, captains, or vassals, when sailing towards the west and south, may turn towards the eastern regions and find islands and mainlands which are, or were, to that quarter pertaining; wishing to follow up our gracious favours to you by similar favours, we, of our will, knowledge and fulness of apostolic power, equally extend and enlarge, with apostolic authority, by the tenor of these presents, in everything and in all respects, the same as if in the aforesaid letters full and express mention had been made of them, the donation, concession, assignment and letters aforesaid, with all and singular the clauses contained in the same letters, to apply to all and singular the islands and mainlands found and to be found, discovered and to be discovered, which in sailing or journeying in this manner towards the west or south may be, or shall be, or shall appear, whether they actually are in western or in southern and eastern regions or in India.

Granting to you and to your heirs and successors aforesaid, the full and free faculty of taking and perpetually holding, freely of your own authority, by yourselves or by another or others, bodily possession of the aforesaid islands and lands, and also of defending them against all persons who may obstruct; and most strictly prohibiting all persons soever, even of any dignity soever, or status, rank, order, or condition, under penalty of excommunication (latæ sententiæ) which transgressors by the very act will incur, from presuming to go, or send, to the said part, to navigate, fish, or seek out islands or mainlands, under any pretext, without the special and express license of you and your aforesaid heirs.

Notwithstanding constitutions and apostolic ordinances and any donations, concessions, faculties and assignments, made by ourselves or our predecessors to all persons whomsover; to kings or princes, to persons of royal houses (infantibus), or any other persons, to regular orders and to military orders, for the aforesaid regions, seas, islands and lands or for any part of them, without regard to the causes of the grant, even if for objects of piety, or of religion, or of redeeming captives or to other causes of the most urgent nature, and with clauses of whatever kind, even derogations of derogations the strongest most efficacious and unusual, and containing judgments, censures and penalties of any kind which have not come into effect by means of actual and real possession, even supposing that, at some time, those to whom donations and concessions of this nature have been made or their emissaries may have sailed there.

Moreover, holding that the tenor of those letters are sufficiently expressed and inserted in these presents, we revoke them altogether by similar will, knowledge and apostolic power and we will them to be held as never made, in so far as they refer to lands and islands not actually in possession, and so we have decreed notwithstanding everything in the aforesaid letters and all other things to the contrary.

Given at St. Peter's at Rome in the year of our Lord 1493, on Sept. 25th, and in the second year of our pontificate.

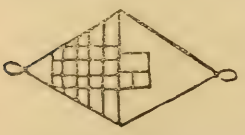
APPENDIX D.

Correspondence between the Sovereigns of Spain and Jaime Ferrer concerning the position and the best manner of laying down the line of demarcation of the treaty of Tordesillas, signed June 7, 1494. Extracted from Navarrete *Coleccion de los Viajes*, vol. 2, p. 111. Translated with the aid of an official expert translator of Spanish.

January 27, 1495.

To the very high and very puissant Sovereigns of Spain, &c., by the grace of God our very righteous lords.

Very high and very powerful Sovereigns: Don Juan de la Nussa, Lieutenant of your Highnesses, has twice shown me some instructions in which your Highnesses make known the decision regarding the partition your Highnesses have made with the most illustrious king of Portugal upon the Ocean, starting from Cape Verde in a westerly line for a distance of three hundred and seventy leagues; and therefore, very high and most serene Sovereigns, I have examined (the subject) to the extent of my humble understanding, although late, and not so soon as I had wished, on account of a slight illness; and therefore I send to your Highnesses, by a man of mine, a figure of the world on a large scale on which may be seen the two hemispheres, to wit, our Arctic and the opposite Antarctic one. And likewise you will see the equinoctial circle and the two tropics of the declination of the sun, and the seven climates, and each one of these circles put in its proper place as in the *treatise on the sphere* and in the *situ orbis* learned men direct and divide into degrees. And, in order that the distance may more clearly be seen of the said three hundred and seventy leagues and how far they extend in a westerly line starting from the said Cape Verde, I have intersected the said distance from pole to pole with red lines, which at the equator are twenty-three degrees apart, and with acute angles, the said lines correspond to the poles of the earth in this figure :—



and all that is crossed by yellow lines will be what belongs to the most illustrious King of Portugal, turning in the direction of the Antarctic pole. And this distance of sea completes the said three hundred and seventy leagues which are, as I said above, twenty-three degrees starting from Cape Verde in a westerly line.

And if in connection with this decision (treaty of partition) your Highnesses should command that I should go thither (to Cape Verde) I will, of my great and obedient love, certainly go at my own expense and without any pay. And in very truth my desire is that all I have in this world shall be at the service of your Royal Highnesses—whom may the infinite Trinity ever keep in guard and protection with very long and very prosperous life.

From Barcelona, January 27, 1495.

Their Catholic Majesties did not understand the above letter, and indeed, if the little figure above may be taken as an indication of what was on the map sent, it is not to be wondered at. Ferrer counted the distance as from Cape Verde, whereas it was from the islands off that cape, and he made the

370 leagues equal to twenty-three degrees, or $16^{2}|_{23}$ leagues to each degree on that parallel. Very soon after (Feb. 28) their Majesties wrote as follows :

By the King and the Queen—To Jaime Ferrer, their Subject.

The King and the Queen. Jaime Ferrer. We saw your letter and the inclosure you sent us therein, which seems to us very good. We consider your having sent it as a service; but for the understanding of it, it is necessary you should be here, and, for our service, that you should put your coming into effect so that you shall be here at latest on the first of May. In which you will do us service.

From Madrid on the 28th day of February, 1495.

I the King—I the Queen.

By order of the King and Queen.

Joan de la Parra.

There is no date attached to the following formal opinion, but, taken in connection with the preceding letters, it must have been presented sometime during the first half of 1495. It also is in Navarrete (Vol. 2, p. 113) as follows. The calculations and the nautical statements in sections 4 to 6 do not impress the reader with a high opinion of Ferrer's attainments; but that may partly be accounted for by errors in copying or printing.

The opinion and judgment of Mossen Jaume Ferrer regarding the Treaty made between the Most Catholic Sovereigns and the King of Portugal ; in which is shown that the author was a great cosmographer and a wonderful expert on the sea.

1. The manner of determining the terminus or end of the three hundred and seventy leagues, starting from the Islands of Cape Verde on a westerly line is as follows :

2. First, it must be noted that the said Cape Verde and its islands lie fifteen degrees from the equator, and it is likewise to be noted that the said 370 leagues, starting from the said islands, comprise to the west eighteen degrees, and each degree on that parallel contains twenty leagues and five-eighths. Moreover, it is necessary to make a straight line, in latitude (sic) from pole to pole only in this our hemisphere, intersecting the said parallel exactly at the end of the said eighteen degrees; and everything lying within this line on the left hand, turning towards the side of Guinea, will belong to the King of Portugal, and the other part by the West as far as it turns by the East towards the Arabian Gulf will belong to the Kings our Lords, if their ships first sail thither. And this is what I understand by the treaty made by your Highnesses with the King of Portugal.

3. And a truth it is and a chief principle in cosmography that in sailing on one same parallel the said terminus can never be ascertained by means of the elevation of the Pole-star (Polus mundi); and the reason is this, that in sailing always by the same parallel the said Pole-star (Polus) maintains the same elevation through all the circumference of the said parallel. And that is true.

4. Nevertheless, I say, that it is possible and a very certain thing that the said terminus and extremity of the said 370 leagues can be ascertained by the North star by the following rule and practical method.

It is necessary for the vessel leaving the Cape Verde islands in search of the said terminus to leave the western parallel or line upon the left hand and to take her course by the quarter of the West towards the Northwest, and to continue to sail in that direction until the Pole-star rises eighteen degrees and one-third, and then the said vessel will be exactly on the aforesaid line which passes from pole to pole at the extremity of the 370 leagues. And from

there it is necessary that the said vessel change and take her course along said line in the direction of the Antarctic pole up to that point where the Arctic pole is fifteen degrees in elevation, and then at that exact end will be the end of the line or parallel which passes through the said Cape Verde and at the end and true terminus of the said 370 leagues; which terminus is very clearly indicated by the elevation of the North star according to the aforesaid rule.

5. And because the sailing chart is not wholly useful and does not suffice for the mathematical demonstration of the above rule, a world map in spherical form is necessary, divided into two hemispheres by its lines and degrees, and the situation of the land, islands and sea, each in its own place—which world map I put down together with these expressions of my meaning and opinion, the more clearly to demonstrate the truth.

And I say that to understand the above rule and practical method it is necessary to be a cosmographer, arithmetician and navigator, or to understand the art; and he who does not possess all these three sciences, cannot possibly understand (the rule) nor (can he succeed) by any other way or rule if he is not expert in the three said sciences.

6. And for a further exposition of the above rule it must be known that the quarter of the wind (point of the compass) the vessel takes as its course, starting from the Cape Verde islands at the end of the 370 leagues, will be distant from the western parallel or line seventy-four leagues at the rate of twenty per cent, and because the said quarter (of the wind-rose or compass) inclines towards the North sailing by it the different (increasing) elevation of the pole-star is clearly apparent, and the said seventy-four leagues comprise three degrees and a third of latitude, very nearly.

7. It is, moreover, to be noted that pursuing the above rule it is necessary to give to each degree seven hundred stadia, according to Strabo, Alfragano, Teodoci, Macrobi, Ambrosi and Euristhenes (Eratosthenes) ; since Ptolemy gives only five hundred stadia to a degree. And I say further that there is another method of finding the said terminus according to the practice and science of mariners, and it is as follows.

8. First, let the sovereigns our lords and the King of Portugal take twenty mariners, ten for each side, the best to be found, and conscientious men, and let them start in one vessel from the Cape Verde islands on a westerly line, and let each one of the said mariners note with great care on his chart, every six hours, the course the vessel makes according to his judgment; and, having been bound under oath, let none of them communicate his opinion to another until the first of the mariners who in his judgment finds himself at the said terminus shall state so to two captains—men of reputation, put on board the said vessel by the will and accord of the said sovereigns. And let the said captains then take the opinions and judgments of the other mariners and, if the rest agree with the first who finds himself at the terminus, let them take his decision as conclusive and final as to the said terminus; and if they do not agree with the first, let them take the opinion and judgment of the majority, and after agreeing, let them change the course on a straight line towards the Antarctic pole, and everything they find on the left hand towards Guinea shall belong to the King of Portugal in the manner above stated.

This second method is uncertain and may be erroneous because it is based on the simple and sole judgment and opinion of mariners, and the first rule is very certain, (that one) by the elevation of the North star, as is shown above.

9. And if in this my decision and opinion any error appear, I will always defer to the correction of those who know and understand more than I, especially to the Admiral of the Indies, who at the present time knows more than any other person in this subject, for he is greatly learned in the theory and admirably practical, as his famous achievements demonstrate ; and I believe that Divine Providence holds him as elect to carry out its great mystery and service in this undertaking, which I believe is the disposition and preparation of that (result) which, hereafter, the same Divine Providence will manifest to its great glory—the salvation and good of the world.

10. Here is shown the navigation of the Admiral of the Main-land. Ptolemy in the eighth book *de situ orbis* says at chapter five:

That the true circumference of the earth at the equator is 180,000 stades, at the rate of five hundred stades to a degree according to his calculation, and counting eight stades per mile, are 22,500 miles, which are 5,625 leagues at the rate of four miles per league in Castillian reckoning, each degree coming to fifteen leagues and two hundred and twenty-five parts of three hundred and sixty. And in the same Book, chapter five, he says that the circle of the tropics is 164,672 stades, which are 20,584 miles, and 5,146 leagues, making for each degree fourteen leagues and one hundred and six parts of three hundred and sixty. Moreover, according to Strabo, Alfragano, Ambrosi, Macrobi, Teodosi and Euristhenes, the said circumference of the earth is 252,000 stades, the which 252,000 stades, at the rate of eight stades per mile, are 31,500 miles, and at four miles per league, are 7,875 leages. Item :—By the circle of the tropics the circumference is 7,204 leagues and seventy-two thousand parts of one hundred and eighty thousand; and I decided it by the rule of three, saying if 22,500 miles at the equator according to Ptolemy give me 7,875 for the said equator, what will 20,584 miles of the circle of the tropics give me ? And in this way you will arrive at the above 7,204 and a half leagues almost, according to the said learned men.

The said circle of the tropics is shorter than the equinoctial circle by 670½ leagues, which is, at four miles per league, 2,682 miles, according to the above calculation summed up and proved throughout. That is, however, calculating according as the above-mentioned learned men direct, 700 stades to a degree; although Ptolemy allows no more than 500 stades to a degree, as above said in the already mentioned book, *de situ orbis*.

11. Item :—It is to be noted that on the equinoctial circle each degree has twenty-one leagues and five parts of eight, and on the tropics each degree has twenty leagues and four parts of three hundred and sixty, according to the said learned men.

12. Starting from Cape Verde on a westerly line the terminus three hundred and seventy leagues comprises eighteen degrees, inasmuch as the said line or parallel is fifteen degrees distant from the equator, and therefore the degrees each of them contains twenty leagues and five parts of eight, according to the said learned men.

13. From Cape Verde to the Grand Canary island are 232 leagues of four miles per league, and it lies from the said Canary on a meridian almost at a third of the "lebeix" or southwestern quarter, and is distant fifteen degrees from the equator, and the middle island of those which lie in front of Cape Verde lies in the quarter of the West towards the Northwest 117 leagues (away), which are equal to five degrees and two-thirds; and from this middle island commences the terminus of the 370 leagues towards the West which terminus is eighteen degrees towards the West from the said middle island, and on that parallel each degree is twenty leagues and five parts of eight, counting 700 stades to a degree, according to the above cited learned men, although Ptolemy uses a different calculation.

14. And according to Ptolemy, each degree of the equator contains fifteen leagues and two-thirds, and of the tropics fourteen leagues and one-third, and on the parallel of Cape Verde fourteen leagues and two-thirds, and therefore the 370 leagues upon that parallel are understood as extending to the West twenty-five degrees and one-third nearly.

15. And the Admiral says in his letter that Cape Verde is nine and a quarter degrees distant from the equator. According to Ptolemy, I see him allowing fifteen and two-thirds leagues to a degree ; nevertheless, I decide with the other learned men as to the distance of the said islands from the equator. The division into stades, although the number given by Ptolemy is different from that given by the above cited learned men, Strabo, Alfragano, Macrobi, Teodosi, and Euristhenes, they are all essentially in agrement, because Ptolemy makes use of longer stades; so that his 180,000 stades are equal to the 252,000 stades of the above mentioned learned men for the equinoctial line as above said.

APPENDIX E.

The table on the next page has been drawn up on the universally accepted basis of the old navigators and geographers, viz., 8 stades equal to 1 Roman mile, and 4 Roman miles equal to 1 Italian league. To attempt mathematical exactness would fill it with confusing fractions and make it useless in reading the old authors. As an illustration of the near approximation of these equivalents let the last item be taken in the third column. If the 20,400 Italian miles be multiplied by 1,618 yards and divided by 2,029 yards and thus reduced into nautical miles, the result would be 16,268 nautical miles against the 16,320 nautical miles of the reckoning in the table by means of stades. The difference is thus only fifty-two miles in the whole circumference of the earth. This will give the measure of the discrepancy or non-equivalence of the quantities.

NOTES TO APPENDIX E.

a. Eratosthenes made the circumference to be 250,000 stades, and added 2,000 stades for convenience of division by 360 into degrees without fractions.

b. Jaime Ferrer (see Appendix D) is reported, as the opinion is given in Navarrete, to have stated that a degree of the equator is $21\frac{5}{8}$ leagues; but if the circumference of 7875 leagues, given also in the same opinion, be divided by 360, the result will be $21\frac{7}{8}$ leagues. There is, therefore, an error in the text or in Ferrer's arithmetic.

c. Posidonius.—I have followed Mons. D'Avezac and Sir George Cornewall Lewis in giving 240,000 stades as the measure of the earth's circumference fixed upon by Posidonius. In most books it is given as 180,000, on the authority of Strabo. It is certain, however, that his first opinion was in favour of 240,000 stades. This statement is made by his admirer Cleomenes, who knew of no other figures. Historians reconcile the conflicting statements by assuming that he changed his opinion in later life.

d. Pytheas of Massilia was a navigator [explorer or merchant], who about the time of Alexander the Great visited the north of Europe. He passed outside the Pillars of Hercules, and sailed in the British seas. Polybius and Strabo considered him to be an impostor, who palmed off his imaginary adventures for truth; but the great Greek geographers accepted his statements so far as to make up their maps on his information. Sir George Cornewall Lewis [*Astronomy of the Ancients*, p. 467], following his naturally sceptical temperament, is inclined to reject his voyages; while, on the other hand, the uncritical optimism of Lelewel accepts them fully. The truth lies, probably, between these extremes; for certain it is that Pytheas was a man of great enterprise and unusual powers of observation. He fixed the latitude of Massilia, by means of a gnomon, at 43° 3′ 58″, and as it is in reality 43° 17′ 30″, it is a very remarkable observation to have been made 2240 years ago, and there are very few latitudes so nearly correct in all the ancient authors. Hipparchus accepted the latitude of Massilia as fixed by Pytheas; but when he himself calculated by the gnomon the latitude of Byzantium he fixed it to be the same as Massilia, two degrees out of the truth. The "impostor" had made a more correct determination than the greatest of the Greek astronomers. Pytheas, when in the British seas, saw the tides which, on the west coast of Britain, are very high in the estuaries of the rivers, and are phenomena most striking to one from the tideless shores of the Mediterranean. He, moreover, correctly attributed them to the influence of the moon.

The particular interest of Pytheas, in relation to the subject of this paper, is the belief of Lelewel that he estimated a degree to be 600 stades—almost the exact equivalent of 60 geographical miles. Pytheas does not, however, appear to have made any direct statement to that effect. It is an inference from his estimation of the distance between Orcus in 61° and Thule in 66°, which was also given as six days' sail directly north, or 3000 stades. The figures are rounded out too much to be made the basis of serious calculation.

e. Magellan gave this opinion to King Ferdinand just before sailing on his great voyage in A.D. 1518.

f. Enciso.—See *ante*, p. 511, for a discussion of Enciso's opinions.

g. This was, in fact, the opinion of both Spanish and Portuguese navigators and diplomatists whenever the leagues of the treaty of Tordesillas came up for discussion subsequent to the convention at Badajoz.

COMPARATIVE TABLE, in Olympic stades, Italian leagues, Italian miles and modern geographical or nautical miles of the length of the Equator and of a degree of a great circle of the Earth, as accepted by the chief geographical authorities in ancient and mediæval times and at the period of the discovery of America.

AUTHORITIES.	STADES.		Nautical miles.		ITALIAN LEAGUES.		ITALIAN MILES.	
	Equatorial circumference.	Each degree.	Equatorial circumference	Each degree.	Equatorial circumference.	Each degree	Equatorial circumference.	Each degree.
Estimations in excess of truth.								
Aristotle ..... B.C. 342	400,000	1111·1	**40,000**	**111·1**	12,500	34·7	50,000	138·8
Archimedes ..... B.C. 214	300,000	833.3	**30,000**	**83·3**	9,375	26·0	37,500	104·1
a. Eratosthenes ..... B.C. 240 Hipparchus ..... B.C. 160 Strabo ..... B.C. 24 Pliny ..... A.D. 52 *b.* Jaime Ferrer ..... A.D. 1493	252,000	700·0	**25,200**	**70**	7,875	21·875	31,500	87·5
c. Posidonius ..... B.C. 86	240,000	666·6	**24,000**	**66·6**	7,500	20·8	30,000	83·3
d. Pytheas of Marseilles ..... B.C. 340	?	?	?	?	?	?	?	?
Present estimate (for comparison)	**216,000**	**600**	**21,600**	**60**	**6,750**	**18·75**	**27,000**	**75**
Estimations below the truth.								
c. Magellan ..... A.D. 1518 *f.* Enciso (practical opinion) ..... A.D. 1519 Sebastian Cabot (at Badajoz) ... A.D. 1524 Thomas Duran (at Badajoz) .... A.D. 1524 Juan Vespucci (at Badajoz) .... A.D. 1524 *g.* Saragossa Convention ..... A.D. 1527 Champlain ..... A.D. 1632 *g.* Spain and Portugal convention . A.D. 1681	201,600	560	**20,160**	**56**	6,300	17·5	25,200	70
Opinion, *circa* A.D. 1500, in round numbers of Italian leagues and miles	192,000	533·3	**19,200**	**53·33**	6,000	16·66	24,000	66·66
c. Posidonius (later opinion) ..... B.C. Marinus of Tyre, *circa* ..... A.D. 120 Ptolemy, *circa* ..... A.D. 150	180,000	500	**18,000**	**50**	5,625	15·625	22,500	62·5
Opinions based on Arabian measurements.								
Friar Bacon ..... A.D. 1267 Cardinal D'Ailly ..... A.D. 1410 Christopher Columbus ..... A.D. 1492 Fernan Columbus ..... A.D. 1524	163,200	453·33	**16,320**	**45·33**	5,100	14·17	20,400	56·67

ROYAL SOCIETY OF CANADA

TRANSACTIONS

SECTION III.

MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES

PAPERS FOR 1899

I.—*A Trigonometrical Survey for Canada; Presidential Address to Section.*

By PROFESSOR C. H. MCLEOD, Ma.E.

(Read May 23rd, 1899).

The subject matter of the Presidential Addresses to Section Three does not seem to have been based upon any general plan. Some of my distinguished predecessors have limited themselves to a brief review of the events of the year, more particularly as regards matters of our immediate concern ; while others have availed themselves of the opportunity which the position afforded them to discuss some subject in which they themselves have been particularly interested, and to which reference at the moment seemed specially opportune.

Since I find myself in precisely this latter position and precedent affords me the choice, I would ask the section to give a few minutes to the consideration of a subject, which is not only of very great interest to myself, but also, I feel certain, to the section as a whole. It is the position in which we in Canada stand to-day in regard to a thoroughly reliable trigonometrical survey of our country ; and our obligation to the nations of the world, to furnish our quota of geodetic data : data which can only be obtained by ourselves, and which the scientific world has a right to demand of us.

At my suggestion, Dr. Pritchett, Superintendent of the U.S. Coast and Geodetic Survey, attended the meeting of this society one year ago, for the purpose of seeking our co-operation in a programme of international work on the North American continent. In presenting his case, he gave an instructive account of the geodetic work in progress in the United States, and referring to the general progress of Geodesy, he pointed out the very important results which are being obtained by co-operation between the various countries through the agency of the International Geodetic Association, an organization which comprises within its membership practically all the nations of the civilized world.

Dr. Pritchett's proposals were very heartily approved by the section. A committee was appointed to urge the importance of the work, and, if possible, to secure its authorization by our Government and the necessary money grant in aid of it. A memorial has been addressed to the Governor-General in Council, but I am not aware that anything beyond a formal acknowledgment has been received in reply. It is also understood that the United States government has sought directly the co-operation of our Canadian government in connection with the project.

Professor Pritchett has asked that a certain definite piece of work be taken up. We are all of one accord that what is required of us is a most important work, and one which Canada cannot afford to overlook. But is even this going far enough? Is it not a fact that the work demanded is one which should form a part of a general scheme for a geodetic survey of the country, and as such become the work of an organization, which has as yet no existence here?

I fear the possibility, that in bringing forward this larger scheme I may, by some, be looked upon as in a measure throwing cold water upon the proposal which was more immediately specified, namely, that of extending the arc of the 98th meridian northwards through Canada. Such is, in fact, very far from my intention. It may be contended that we should work from the smaller to the greater. It is well remembered that the Ordnance Survey of Great Britain sprang from the project, undertaken in 1784, of connecting, by triangulation, the Greenwich and Paris observatories; and that the Coast and Geodetic Survey itself had its beginning in small things. But we are not now, scientifically, in the position of England and France a century ago. We have the ripe experience of other countries to guide us.

When we consider this matter in the light of what is actually taking place about us, it will be seen that there is a great and urgent demand for an organization which will render of permanent value the various detailed surveys which are being prosecuted in connection with the several departments of the government. We find at least five such separate and detached surveys in progress. Not only is there no framework upon which to unite these several systems, but also—and I do not say it in any spirit of criticism—there is not, for the greater part, a sufficient basis upon which to tie in the several portions of any one survey. While the detail work of these various surveys is no doubt excellent for the immediate purposes in view, they are, notwithstanding this, disjointed, not only as regards one another, but as concerns the several parts of the individual surveys. That this is so, is no discredit to any one concerned in the work; it cannot, under the existing order of things, be otherwise. Further, and what is, perhaps, from a utilitarian point of view much more important, the information obtained by these topographical surveys is, in the absence of a thoroughly conducted and well referenced trigonometrical survey, largely ephemeral. While the immediate object is gained for the time being, the information in a large measure ceases, through lapse of time, to be of permanent value.

While the organization and equipment of a Geodetic survey might at the outset entail a somewhat heavy expenditure, such a department

would, if properly directed, prove in a very few years to be an actual economy.

There is now an immediate and pressing need for a triangulation survey of the highest order of accuracy, in conjunction with astronomically determined positions, and a system of precision levels, in the Gulf of St. Lawrence and the Maritime provinces. This is required, not only as a proper framework upon which to base the operations of our tidal survey, but also to unite with that survey, the various portions of the hydrographical surveys in progress from time to time under the direction of the officers of Her Majesty's surveying ships.

It is a fact, though not one that has been dwelt upon, notwithstanding the many unexplained shipwrecks which have occurred there, that there is no point in the Gulf of St. Lawrence, or indeed anywhere upon our Atlantic sea-board, of which the longitude is known with even approximate accuracy. In any survey of a coast line, it is certainly of prime importance to fix the precise geographical position of that line ; and until this is done, knowledge of detail, however extensive and accurate, cannot be fully utilized.

The commercial advantages of such a work as this will be at once recognized, even by those who do not see eye to eye with us in scientific affairs. It will also afford an illustration of how readily the purely practical may be made to serve the highest scientific ends. The main chain of this triangulation would naturally form an extension of the oblique arc near the Atlantic sea-board of the United States, which could thus be advantageously continued in Canadian territory for a distance of over 500 miles. It is this arc to which Professor Pritchett made reference as being of special importance in connection with the determination of the spheroid best adapted to the North American continent.

What has been said with regard to the Atlantic coast applies with the same force to our Pacific coast, and there also connection would naturally be made with the United States system. The triangulation along the proposed central meridian arc would well serve to fix points of departure for the land surveys of Manitoba and westwards ; and the admirable topographical work now in progress in our mountain ranges would be readily connected with the Pacific Coast range series. In fact, situated as we are in relation to the United States, our systems of triangulation should be connected with theirs all along our southern boundary, and the work of the two countries would, from a scientific point, be one.

With the arc along the 39th degree of latitude now completed from coast to coast, may we in the North not hope that in the not far distant

future, our eastern and western shores shall be united along the 52nd parallel by a similarly strong chain. This small circle, situated as it is at the part of greatest width of the continent—just touching the Hudson's Bay—would, very curiously, correspond precisely in latitude with the great European arc now in progress, and, extending somewhat over 70° in longitude, would slightly exceed the latter in length. To such a work we might indeed look forward with pride as worthy of our country.

The primary triangulation of the United States has at Montreal overstepped the boundary line, and there are established there both trigonometric and longitude stations. This arises from the fact, that since the direct Greenwich-Montreal longitude determination, the position of Montreal is much more accurately known than any other point in America. Prior to this determination, the longitudes of American points depended upon the cable determinations of 1866-70-72. To this old determination, which was made without interchange of observers, there was assigned a probable error of ·041 sec. The superior facilities of the 1892 determination brought the probable error down to ·012 sec., with the added reliability due to interchange of observers.

Reverting again to the invitation extended to us by the United States to take up our part in the triangulation along the 98th meridian, there is no reason why that work should not be the first to be carried out by a newly constituted Geodetic Survey. Such a triangulation will, in any case, be required ultimately, and it is fitting that Canada should recognize the magnificent work which has for years been carried on by our friends across the line, and promptly embrace the opportunity offered her to contribute her mite towards the advancement of the knowledge of the world.

In a foot-note to his paper presented last year, Professor Pritchett mentioned that the Government of Mexico had announced its readiness to undertake its part in the proposed work. A few days ago Professor Pritchett informed me that he had just had a letter from the Director of the Mexican Geodetic Commission announcing that they were ready to begin work, and that preliminary plans were being prepared for joining the two triangulations at the Rio Grande. The Mexican Commissioner was very anxious to know if Canada was coming into the scheme, and asked if any progress has been made to that end.

Is it fitting that Canada should at this time be found unable or unwilling to follow in the path which has been so plainly marked out for her? There is surely no doubt as to the answer to this question.

I have thus endeavoured briefly to show that the time is ripe not only for the prosecution of this work, but also for the permanent establish-

ment of an organization, which, while not trenching upon the individuality of the various activities now in progress along similar lines, would co-ordinate these and greatly enhance their value to the community. I do not know whether our government does or does not consider that the necessary money is available for the purpose, but I do know that no better investment could at this time be made than in the systematic and adequate equipment, under scientific guidance, of a Coast and Geodetic Survey for Canada.

II.—*Thorium and Uranium Radiation.*

(Preliminary note)

By E. RUTHERFORD, MA.B.Sc., Macdonald Professor of Physics, McGill University, Montreal.

AND

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(Presented by Professor Cox, read May 26th, 1899.)

In 1896 Becquerel discovered that the compounds of the metal uranium continuously emitted a radiation similar in character to Rontgen rays. These rays have the property of acting on a photographic plate in the dark, and of making the gas through which they pass a partial conductor of electricity. They also have the power of passing through considerable thicknesses of metal and in general behave very similarly to X-rays emitted from a so-called "soft" tube.

In 1897 Schmidt (*Wied. Annal*, May, 1898) found that the compounds of thorium had the same property as uranium. In a paper by one of us (Rutherford, *Phil. Mag.*, Jan., 1899) the radiation emitted by uranium has been considered in detail. The present paper is an extension of the investigation to the radiation emitted by thorium and its compounds, and a comparison of the two types of radiation.

The methods of investigation are similar to those used in the previous work. The intensities of the radiations were compared electrically by measuring the rate of discharge of electrification produced by the rays. A layer of the radio-active substance was uniformly spread on a small platinum plate which rested on the top of a larger brass one. An insulated parallel brass plate about 4 cms. distant was connected to one pair of quadrants of a delicate electrometer, the other pair of which was earthed. The lower plate was connected to one pole of a battery of 95 volts, the other pole of which was also to earth. When the quadrants of the electrometer were separated the top plate gradually acquired the potential of the lower plate, and the rate of movement of the electrometer needle was taken as a measure of the current through the gas; the gradual charging of the top plate being due to the movement of the charged particles or ions produced by the radiation throughout the volume of the gas. It has been shown (*loc. cit.*) that the intensity of the radiation is proportional to the current through the

gas, *i.e.*, to the rate of movement of the electrometer needle when a large E.M.F. acts between the plates.

It was found that layers of this aluminum foil over the active substance cut off the intensity of the radiation gradually, but not so rapidly as in the case of uranium. The decrease of the intensity for the first few layers of aluminum foil follows a regular absorption law. After a certain thickness of foil has been added the intensity of the transmitted radiation diminishes very slowly and a much larger proportional thickness of metal is required to reduce the intensity still further. These results show that the radiation emitted from thorium is complex, and that different types of radiation are emitted, some of which are more readily absorbed than others.

Using aluminum foil, the amount of the more penetrating type of radiation depends largely on the thickness of the layer of the active substance. With thin layers of the radio-active material, the rate of leak due to the more penetrating rays is hardly measurable compared with that due to the more absorbable rays.

The action of paper in cutting down the intensity of radiation is worthy of remark. The first thickness of ordinary foolscap paper cuts down the intensity of the radiation to about two-thirds of its value. The addition of successive layers changes the intensity but little; an extra layer, several millimetres thick, is quite transparent to the rays. Uranium radiation is in this respect different from thorium radiation, for a few thicknesses of paper are almost opaque to the uranium rays.

It was found that all the compounds of thorium examined, viz., thorium oxide, thorium sulphate, and thorium nitrate gave out the same kinds of radiation as measured by the transparency of aluminum foil for the rays. The intensities of the radiation differed largely ; for equal weights of active substance being greatest for thorium oxide. The nature of the radiations is thus independent of the particular state of chemical combination of the compound, but depends only on the presence of thorium in the material.

Thorium radiation is absorbed in its passage through the air, but not so rapidly as the uranium rays. Before an infinite plane of thorium oxide the intensity of the radiation at a distance of 10 mms. from the surface would only be one-half of that at the surface. For uranium there would be the same diminution in about 4 mms.

By means of a specially constructed apparatus, the absorption of thorium radiation at different pressures was examined. From a pressure of one-half to four atmospheres the absorption was found to be directly proportional to the pressure of the gas. The method of measurement was similar to that described in a previous paper.

It was very early observed that the radiation from thorium oxide was not constant, but varied in a most capricious manner. This was the more peculiar as the sulphate and nitrate were fairly constant. All the compounds of uranium also give out a radiation which remains remarkably constant and probably varies very little with time. Becquerel has found that a specimen of uranium which had been kept in a dark room for two years gave out the same intensity of radiation as at first. The inconstancy of the radiation from thorium oxide was examined in detail, as it was thought it might possibly give some clue as to the cause and origin of the radiation emitted by these substances.

It was found that if the substance was inclosed in a lead box with a door, the rate of leak was much slower with the door open than closed. The addition of a slight draught of air caused by opening or shutting the door of the room diminished the rate of leak still more. Under similar conditions the rate of leak due to the sulphate and nitrate of thorium and the uranium compounds is not appreciably affected. The sensitiveness of thorium oxide to slight currents of air is very remarkable, and made it difficult to work with. With the air quite still, the substance in a few minutes regained its normal activity. The recovery was quite gradual. On covering the radio-active substance with aluminum foil the action was reduced, but was still quite marked.

In order to investigate the matter in more detail, the substance was placed in an air-tight vessel. When a current of air was passed through by means of a water pump on a pair of bellows, the rate of leak rapidly diminished to about one-third of its value, and did not change much with considerable increase in the velocity of the blast. On cutting off the current of air, the substance gradually recovered its normal state. The effect was independent of the amount of moisture present, as air bubbled through water gave the same effect as air which had passed through a column of calcium chloride and phosphorus pentoxide. It was independent of the presence of carbonic acid. A current of coal gas gave the same effect as a current of air.

The reduction of the rate of leak by a given current of air depends on the thickness of the layer of the active substance. With thin layers the diminution was small, but with layers several millimetres thick the action was greatly increased. Layers of thin aluminum foil over the thorium oxide only partially diminished the effect.

The effect persisted unchanged if the same air was passed backwards and forwards through the apparatus by means of a suitable aspirator. This seems to show that it is not the presence of any substance in the air existing in small quantity, that produces the effect. A large number of experiments of various kinds have been tried, but so

far, no clue has been obtained as to why this action should be so manifest in thorium oxide. It appears as if in the pores of the thick layer of thorium oxide some change takes place with time, which increases the intensity of the radiation, and if the result of the action is continually removed, the intensity of the radiation is diminished. This would explain why the action is shown chiefly in thick layers, and depends on the current of air. All experiments so far tried show that the action is not due to the removal of the ions between the plates by the air currents, but is rather the result of a change in the condition of the radio-active substance at or near its surface.

The phenomena of electrical conduction produced by thorium radiation are, as far as the investigations have gone, strictly similar to those produced by Rontgen rays and uranium radiation, and obey the same laws. For high pressures of air, thorium oxide behaves differently from uranium, but the difference is probably closely connected with the action of currents of air on the intensity of the radiation, which we have already considered. A special apparatus was constructed to examine the properties of uranium and thorium radiation at high pressures. The investigation is not yet completed but has led to some interesting results. It was found that the rate of recombination of the ions is very rapid, especially at high pressures. If we take the case of thorium radiation, the intensity is reduced to one-half, after passing through 10 mms. of air at atmospheric pressure, and assuming that the absorption is proportional to the pressure the intensity would be reduced to one half in a distance of ·5 mms. for a pressure of 20 atmospheres. The ionization is thus very intense near the surface of active substances, and the ions recombine with great rapidity after they are formed, so that very large electromotive forces are required to carry them across to the electrodes before any appreciable amount of recombination has occurred.

The rapidity of recombination depends largely on the amount of dust or nuclei present in the air through which the ions are passing. A striking experiment to illustrate this action can be readily shown by filling the vessel in which the radio-active substance is placed with tobacco smoke. The rate of leak immediately falls to less than one-tenth of its value. The intensity of the radiation emitted by the substance is unaltered, but a great number of the ions in their passage between the plates give up their charges to the nuclei in the smoke, and the current is correspondingly diminished.

III.—*Damping of Electrical Oscillations.*

By HARRIET BROOKS, of McGill University.

(Presented by Mr. Deville, and read May 26th, 1899.)

The oscillatory character of the discharge of a Leyden jar was suspected by Henry, in 1842, from observations on the anomalous magnetization of steel needles placed inside a coil in the discharge circuit.

In 1857 Feddessen detected the oscillations by putting an air-break in the circuit connecting the inner and outer coatings of the jar. He examined the appearance of the air-break, while the discharge was passing, by means of a rotating mirror, and found that the image consisted of a series of bright and dark bands rapidly decreasing in breadth and intensity. When a large resistance was placed in the circuit the image became a broad band of light gradually fading away in intensity.

The method of the rotating mirror has been employed by Trowbridge, who photographed the image given by the mirror, and by comparing the breadth of successive bright bands, was enabled to deduce the ratios of succeeding half-oscillations.

In the following experiments the magnetization of steel needles placed in the discharge circuit was made the basis of the method employed.

Professor Rutherford has shown in a paper on "A Magnetic Detector of Electrical Waves," that when a steel needle magnetized to saturation is placed inside a solenoid and a discharge passed, the magnetization of the needle is reduced, and this reduction is dependent, for any given size of needle, upon the magnetic force in the solenoid and the period of oscillation of the discharge. The effect also varies with the hardness of the steel employed in the needle and with its length and diameter. Thick wires are affected to a less depth than thin wires.

The needle used in the experiments was composed of fifty-five very fine steel wires, a centimetre and a half in length. These were put together in the form of a compound magnet and insulated from one another by paraffin in order to prevent eddy currents.

This needle was placed in a groove at the centre of a block of ebonite, around which was fastened an almost complete circle of brass. The brass circle was graduated and provided with a movable arm by means of which any desired arc of the circle might be included in the discharge circuit. The whole was fixed in position before a mirror magnetometer and placed in circuit with a Leyden jar. The circuit contained also an adjustable air-break whose terminals were brass balls a centimetre and a half in radius.

The needle was magnetized, placed at the centre of the circle and the deflection of the magnetometer noted. When the discharge passed round the circle there was a fall of deflection due to the partial demagnetization of the needle. The detector was then removed, magnetized again to saturation and replaced. The direction of the discharge was reversed and the fall of deflection again observed. One of these directions is such that the magnetizing force of the first, third, fifth, etc., half-oscillations is in opposition to the magnetization of the needle, while in the other direction it is the second, fourth, sixth, etc., half-oscillations which demagnetize the needle. Since the magnetic force on the needle is proportional to the length of arc traversed by the discharge, if the arc in one case is adjusted so that it will give the same deflection as that given in the other, then the ratio of the smaller arc to the greater, will be the ratio the second half-oscillation bears to the first.

The circuit on which most of the observations were made was rectangular in shape, measuring 63 cm. by 35 cm. The discharge wires were of copper 0·5 mm. in diameter, and the air-break varied in length from one to ten millimetres. A large Wimshurst supplied the current.

The damping of the oscillations was found to increase rapidly and steadily with the length of the spark-gap. The ohmic resistance corresponding to the absorption of energy by the air-break was found by inserting in the circuit a known electrolytic resistance. A solution of sulphate of zinc with zinc electrodes proved most suitable for the purpose. The damping due to the resistance in the air-break and the known resistance was observed and a comparison of this with the damping due to the air-break alone, gave the resistance of the latter. By varying this electrolytic resistance, a curve was obtained, giving the resistance for all values of the damping.

When the capacity of the circuit was altered by varying the number of Leyden jars, the inductance and spark-gap remaining the same, the damping was observed to vary as the square root of the capacity.

When the capacity and spark-gap were kept constant and the inductance varied by changing the length of the circuit, the damping was found to decrease steadily as the inductance increased.

The copper wires of the circuit were replaced by iron wires of the same diameter and the damping considerably increased. That this was not due only to the greater resistance of the iron wire was proved by the fact that copper wire of smaller diameter than that usually employed gave no increase whatever in the damping. The currents of high frequency magnetize the iron, they thus penetrate less deeply into the metal and meet with greater resistance.

Balls made of iron and of aluminium, replacing the brass balls at the terminals of the spark-gap made no difference in the damping or in the amount of demagnetization of the needle. From this it may be concluded, that in the case of the oscillatory discharge it is the state of the gas between the electrodes that affects the discharge, rather than anything in the nature of the electrodes themselves, as in case of a continuous discharge.

Small Plücker tubes were placed in the circuit and the discharge passed through them. They were found to offer resistances varying from fourteen to thirty ohms according to the nature of the gas or the pressure to which the tube was exhausted. The resistance of some of the tubes was so high that the oscillations were cut down entirely and the discharge became unidirectional.

In order to investigate the relation between the pressure of the air at the spark-gap and the damping, the spark-gap was inclosed in an air-tight glass bulb and the bulb exhausted. The damping rapidly decreased as the vacuum became higher. An air-break of 5 centimetres at a pressure of 100 mm. of mercury gave the same damping as an air-break of 7 mm. at atmospheric pressure. Further investigations on the effects of high vacua and the presence of different gases on the discharge are in progress.

IV.—*Notes on Frazil and Anchor Ice, with Considerations as to the Freezing Point of Water.*

By HOWARD T. BARNES, M. Sc.

Joule Student of the Royal Society (London); Demonstrator in Physics, McGill University.

(Communicated by Prof. John Cox, M.A.)

In two previous communications[1] the author had the honour to submit to the Royal Society of Canada the results of certain experiments on the formation of river ice, carried out near Montreal. An attempt was made to place the question on a scientific basis by connecting the formation, agglomeration, disintegration and decay of the ice with temperature changes in the water, in such a way as to render it possible from climatic conditions to form conclusions as to the state of the ice. In a lecture on this subject, recently given by the author, before the Applied Science Graduates' Society of McGill University, a number of interesting questions arose, which it is thought might be of interest partly as the subject of the present communication.

SEC. I. ON THE DENSITY OF ICE.

Quite recently a paper[2] was published by Prof. Nichols of Cornell University, in which is given the results of a very careful series of determinations of the density of ice, by several well selected methods. The work was primarily undertaken to reconcile the discrepancies in the work of previous observers, and with his own more careful work to fix the constant for the ice calorimeter. Incidentally, however, it was shown for the first time that the density varies within narrow limits, depending on the age of the ice and the temperature of formation. The author has stated[3] that it was not likely that ice with a density different from normal could be formed under any condition, and that there were no experimental data to support such a supposition. The recent work of Nichols amply supports this statement, especially so far as the meaning of the author had reference to the formation of anchor ice by ice too dense to rise from the bed of a river, an opinion which has been inadvertently given by previous observers. Within certain limits, however, it appears that natural or old ice is denser than new or artificial ice by

[1] Trans. Royal Society of Canada, vol. II. (N.S.), p. 37, 1896; vol. III., p. 17, 1897.

[2] Physical Review, vol. VIII., p. 21, 1899.

[3] First communication, p. 44; second communication, p. 29; Canadian Engineer, vol. V., p. 8, 1897.

about two parts in one thousand. The mean values are given by Nichols[1] :

For artificial ice, 0·9161
For natural ice, 0·9180

Another interesting point brought out by Nichols's experiments is that, from certain of his preliminary results, ice formed at a low temperature is denser than ice formed at a higher temperature. He remarks, however, that "the whole question of the influence of time, and of the condition under which freezing occurs, is one which demands further and more extended investigation." It occurs to the author that possibly the phenomenon noted during an extremely cold day, of the fine frazil crystals apparently floating lower in the water than during milder weather, might be explained by the fact of their very rapid formation at a low temperature. Such ice, as Nichols observes from his experiments, would tend to pass back to the normal density with lapse of time. From Nichols's work it appears that the greatest density noted was one part in one thousand higher than normal, so that this would have very little appreciable effect on the buoyancy of the ice. Whether the fine crystals formed as frazil crystals are would under extremely rapid growth have a greater density than that found by Nichols, must be settled by further experiment. It is a possible explanation of this well known phenomenon, and when coupled with the fact that the water is very slightly undercooled, which would render it less dense, it assumes a more plausible aspect.

Sec. II. On Radiation as the Cause of Anchor Ice Formation.

It has been suggested that further experiments are required to settle the question of the effect of radiation in the formation of anchor ice. It appears to the writer, after a careful consideration of the data available, that the primary cause of the formation of ground ice is radiation. It has been urged, however, in the writer's experiments to determine the depth of penetration of the sun's rays,[2] that if at two feet immersion of the thermometer bulb the temperature indicated had fallen off so much compared with eight inches immersion, then at only a few feet would the effect become extinct altogether, whereas it is known that anchor ice forms at depths varying from 30 to 40 feet. It must be borne in mind that a linear relation may not be assumed to connect the distance with the amount of penetration. It is evident that the greatest absorption takes place in the first few feet of water incapable of transmitting the thermal rays of great wave length, after which the absorption falls off more and more as there is left in the penetrating solar ray the light waves of small wave length, and the thermal waves approaching more

[1] Loc. cit., p. 36.
[2] Second communication, p. 24.

nearly in length those of light. Finally, however, all the heat waves will become absorbed, and this point probably represents the limit of disintegration of anchor ice by the sun. It represents also the limit of formation for the converse effect of heat radiation *from* the bottom, which is precisely similar.

Taking the results obtained on Feb. 13th, 1897, and reproduced here for the sake of convenience, it will be noticed that there are in all only three observations, at three different depths. These will be sufficient to obtain a general idea of the rate of absorption.

Date.	Sunshine in %	LOCALITY.	Diff. from 0° C.	Air Temp.
Feb. 13th.	100	5 ft. from surface (bottom).	+ ·0186° C.	+ 16° F.
"	"	2 " " "	+ ·0474°	"
"	"	8 ins. " "	+ ·0741°	"
"	"	Shallow current.	+ ·0461°	"
Feb. 15th.	67	3 ft. from surface.	+ ·0423°	30° Sky Clear
"	"	8 ins. " "	+ ·0819°	" "
"	"	Just under edge ice.	+ 0292°	" "
"	"	Deep current.	+ ·0280°	" "
"	"	Bottom of back water, sun clouded	+ ·0112°	" Cloudy.

Unfortunately the observation at five feet was made with the thermometer bulb on the bottom, and as the presence of ice was evident there, it indicated a lower temperature than it otherwise would have done. Then, again, the thermometer bulb, being of a light gray lead colour, would not absorb the full amount of the thermal rays. It was also continuously losing heat to the surrounding water, the temperature indicated being really nearly the temperature of the water produced by the thermal absorption. Such of the rays as were not absorbed by the water would not, therefore, be wholly detected. It is possible to form some idea of the very large effect produced by the sun's heat by assuming, as seems justified from a plot of the observations, some form of exponential formula to connect the depth with the temperature indicated.

Taking the expression

$$S = Ae^{-K(t-t_1)}$$

which fits the observations most closely, where

S = depth of immersion of thermometer bulb.
t = temperature indicated by thermometer.
t_1 = temperature of water if uneffected by sun's rays.
K & A = constants,

there is given in common logs.

$$\log. S = \log. A - K(t-t_1) \cdot 434$$

Applying this expression to the observations on Feb. 13th and 15th (*supra*), there is given :

Date.	*S*	*log. S*	$(t-t_1)$ ·434	*K*	*log. A*
Feb. 13th	8″	·903	·0322	41·1	2·227
" "	24″	1·380	·0206		
" "	60″	1·778	·0081		
" 15th	8″	·903	.0355	38·2	2·258
" "	36″	1·556	·0184		

The agreement of *K* and log. *A* for the two days is good, when it is considered how roughly the distance *S* was measured. The reading at 5 feet on Feb. 13th indicates, as would be expected, too low a temperature. Assuming, for this depth, log. *A* and *K* from the depth of 8″ and 2 feet, log. *S* comes 1·894 instead of 1·778. It must be remembered again, however, that this is only a rough generality.

If it may be assumed that the depth to which the sun's rays would be no longer indicated by the thermometer would be when $(t-t_1) = O$, then

$$\log. S = \log. A,$$

and hence on

Feb. 13th $S = 14$ feet,
" 15th $S = 15$ feet,

a very good agreement, considering the extent of the extrapolation.

Of course, this must not be taken as the total depth of penetration, for had the thermometer bulb been black it would have detected the rays to a much greater depth, but it may be considered the least limit. Conversely it was shown by observations at night that under a clear sky the thermometer bulb at a depth of about one foot showed the effect of radiation[1] from the water. The temperature indicated by the bulb fell, when left undisturbed, nearly ·001° C. in 15 minutes.

Summing up the evidence in favour of radiation as the cause of anchor ice formation, there is :

a. Effect measured on the bulb of the thermometer.

b. Growth of anchor ice much more readily on dark objects.

c. Absence of anchor ice under a cover, such as surface ice or a bridge, which could act as a check to radiation.

d. Immediate disintegration of anchor ice under a bright sun.

e. Non-formation on cloudy nights.

Sec. III. On the Freezing Point of Water.

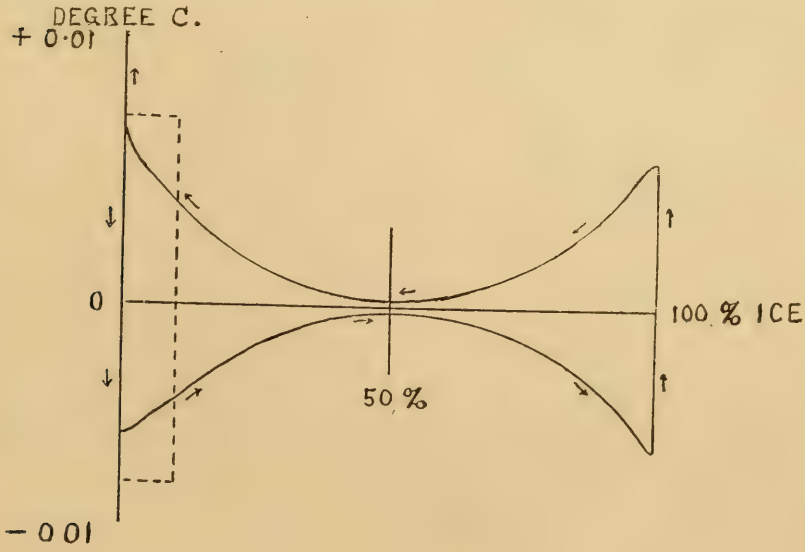
It had been hoped that before this experiments could have been made to determine the dependence of the absolute temperature of a freezing-

[1] L. c., p. 25.

point mixture with the rate of formation or solution of ice, but, owing to the stress of other work, the author has been able no more than to design and have partially constructed the apparatus necessary. In the near future it is hoped the work may be continued. In the meantime, a consideration of the observations made under different conditions on the river show that where there is a large quantity of water at the freezing-point being rapidly cooled, the temperature of the water does not remain exactly at 0° C., but sinks a few thousandths of a degree below. Correspondingly, where the ice is melting, the temperature rises above the freezing-point about the same amount. Under surface ice such large variations are not so common, on account of the larger quantity of ice.

It appears that there may be drawn certain conclusions relatively to the complete change of a quantity of water into ice and *vice versa.* If it is imagined a quantity of water subjected to a uniform and definite loss of heat at the freezing-point, and continuously stirred, so as to produce intimate mixing between the ice and water, then it is probable that the temperature will fall slightly below the freezing-point, of the order of a few thousandths of a degree, will gradually approach the freezing-point as the quantity of ice grows, until finally, as the ice predominates over the water, the temperature will drop again. Conversely, if it is imagined a quantity of ice melting, and if possible subjected to constant stirring, then the temperature will rise slightly above the freezing-point, depending on the amount of heat being absorbed. The temperature will then drop, more and more approaching the freezing-point as the quantity of water increases, until the quantity of water begins to predominate, and then will rise again.

Schematically the complete process may be represented as in the figure by following the arrows.



To obtain any idea of the amount of variation beyond 50% of ice, there is required more experimental knowledge. The dotted rectangle roughly represents the extent of the range during the winter at a point like the Lachine Rapids, where the percentage of ice never reaches a very high figure. Within this range the author's measurements show the sort of variation to be expected. On Feb. 12th, 1897,[1] with rapid formation of ice under a strong wind at a temperature of —2° F. the water showed a temperature

of — ·0065
and — ·0068

below the freezing-point.

On Feb. 7th, under a cloudy sky and air temperature slightly above freezing, the temperature recorded was

+ ·0197
+ ·0182

This was slightly higher than could be expected, on account of the rain during the day. The effect of the rain was shown the next day, also a cloudy, rainy day, when the temperature reached

+ ·0547
+ ·0415

During this time the ice was very thoroughly cleared out of the rapids. On the other days, with a bright sun, the temperatures measured were effected by the absorption of the solar heat in the water.

To fix the freezing-point of water for accurate temperature measurements, it is necessary to define the quantity of ice and water and the rate of loss or gain in heat to the surroundings. With an even mixture it is not certain whether the two branches of the curve for a gain or loss of heat will meet, or whether they will still be separated by a minute temperature difference. It is probable they will be, and in that case a freezing-point mixture must be defined as *an intimate and equal mixture of ice and water, neither gaining nor losing heat.*

The above considerations must be supported by laboratory experiments before conclusive figures can be deduced, and especially in the region beyond the dotted line. The dotted region may be considered to be fairly well substantiated by existing data.

[1] Second communication, p. 22.

V.—*Illustrations of remarkable Secondary Tidal Undulations, in January 1899; as registered on recording Tide Gauges in the region of Nova Scotia.*

BY W. BELL DAWSON, M.A., MA.E., C.E.

(Read May 26, 1899.)

These undulations are shown in the accompanying plate (Plate I.), which gives facsimile reproductions of the simultaneous record from the self-registering tide gauges at Halifax and Yarmouth, N.S.; St. John, N. B., in the Bay of Fundy; and St. Paul Island in Cabot Strait, which is the main entrance to the Gulf of St. Lawrence.

The length of the record shown, is from noon on December 31, 1898, to noon on January 2, 1899; a period of two days. The heaviest undulations occurred on January 1. The time as shown throughout is Standard time for the 60th Meridian West; or four hours slower than Greenwich Mean Time; and the corresponding hour lines at the different tidal stations, thus represent the same moment in absolute time. The vertical scales of height are different at each locality, in accordance with the varying range of the tide. In reproducing the Halifax record, the tide traces have been displaced in height, as noted, to avoid confusion of the lines.

On the following plates (II. and III) the tracks of storms during the period in question, are shown; as well as the barograph record at St. John, N. B. The chart of the storm tracks is taken from the "Pilot Chart of the North Atlantic" for February, issued by the United States Hydrographic office. It will be noticed that two of the storms rose fully to hurricane severity. The unusual undulations of the barometer at the time are also noteworthy, especially on January 1.

The tide itself in its general progress, arrives first at Halifax and St. Paul Island; then about two hours later at Yarmouth, and an hour later still at St. John. Its range increases in the same order; from about 5 feet at Halifax and St. Paul Island, to 15 feet at Yarmouth and 25 feet at St. John, at the spring tides.

With regard to the occurrence of secondary undulations, they are almost continuously present at Halifax at all times, and it is exceptional for the tide trace to be free from them; but those here shown are unusually heavy. A few days before the date now under consideration, they were also as exceptional; namely, at the high water of December 26, between 19 and 20 o'clock, when they attained a maximum range of 1·20 feet.

At St. Paul Island, some amount of secondary undulation is more usually present than absent; but it seldom attains a range of more than two or three inches. At the date in question, they have very much their usual character.

The secondary undulations shown in the accompanying plate, are most pronounced at Yarmouth, where they attained a range of over *four feet* on January 1. A moderate amount of secondary undulation almost constantly occurs at that station, and it is frequently pronounced.

At St. John, N. B., undulations of nearly half a foot occur occasionally; and some amount of secondary undulation is perceptible at perhaps one-half of all the tides there registered, although it is usually feeble.

These notes are given to explain in a general way what is usually observed at these tidal stations, with regard to secondary undulations in the tide; so that the illustrations now given may be better understood. The following list gives the maximum ranges which occurred at these stations at the date referred to, and the range of the tide itself at the time. The range of the secondary undulations is measured from the mean tide line running centrally through them, in order to eliminate the general rise and fall of the tide from the result. The relative periods of the undulations need not be detailed, as these are evident in the plate itself.

Secondary tidal undulations of Jan. 1, 1899. Time of occurrence, range, etc.

Halifax. At Low Water, Jan. 1, from $2^h\ 30^m$ to $5^h\ 30^m$; and at the following High Water, from $8^h\ 00^m$ to $10^h\ 00^m$.
Maximum range of secondary undulations, 1·20 and 1·15 feet.
Range of the tide itself at the time, 3·60 feet.
The undulations have thus 33 per cent of the range of the tide.

St. Paul Island. Near High and Low Water, Jan. 1 and 2.
Maximum range of secondary undulations, 0·23 of a foot.
Range of the tide itself at the time, 2·20 feet.
The undulations have thus 10 per cent of the range of the tide.

Yarmouth. At Low Water, Jan. 1, from $6^h\ 00^m$ to $8^h\ 30^m$.
Maximum range of secondary undulations, 4·20 to 4·70 feet.
Range of the tide itself at the time, 10·40 feet.
The undulations have thus 45 per cent of the range of the tide.

St. John, N. B. At Low Water, Jan. 1, from $6^h\ 30^m$ to $9^h\ 00^m$.
Maximum range of secondary undulations, 1·90 feet.
Range of the tide itself at the time, 18·00 feet.
The undulations have thus only 11 per cent of the range of the tide.

The undulations are naturally most conspicuous on the tide traces at times of high and low water; but in the case of undulations of such

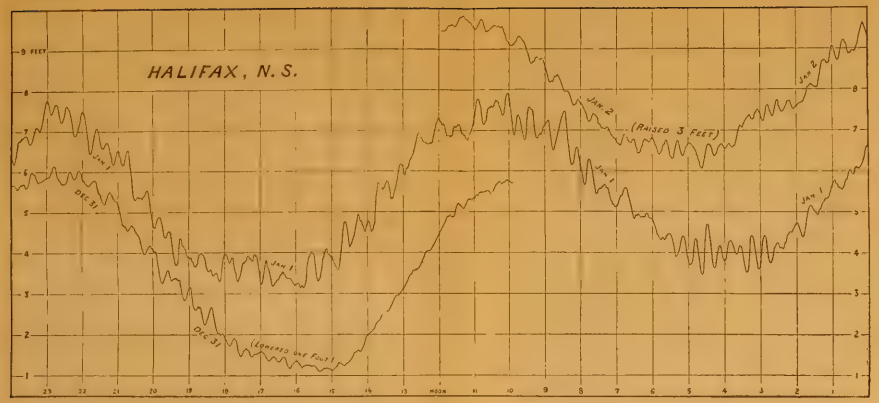
amplitude as this, they would be quite apparent at any time of tide, even where the range is as great as at St. John.

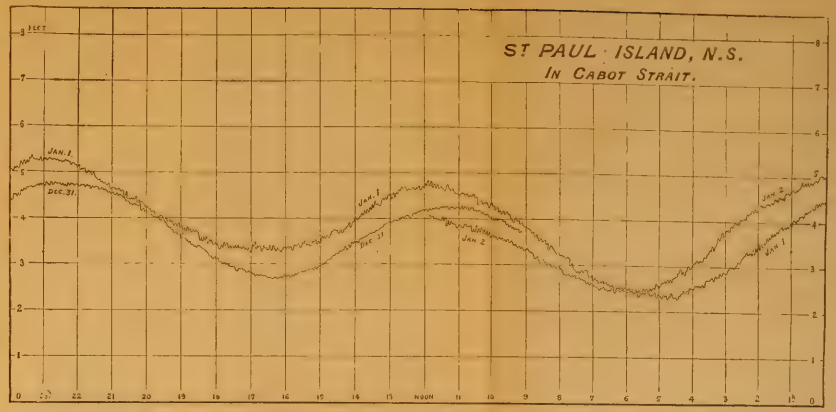
We will not venture to discuss at present any theory for the explanation of these undulations, as our purpose here is merely to place on record a remarkable example of them. It seems fairly evident however, that these undulations occur chiefly at times of storm disturbance; and possibly in the present instance, they may be due in part at least to the inter-action of different storms.

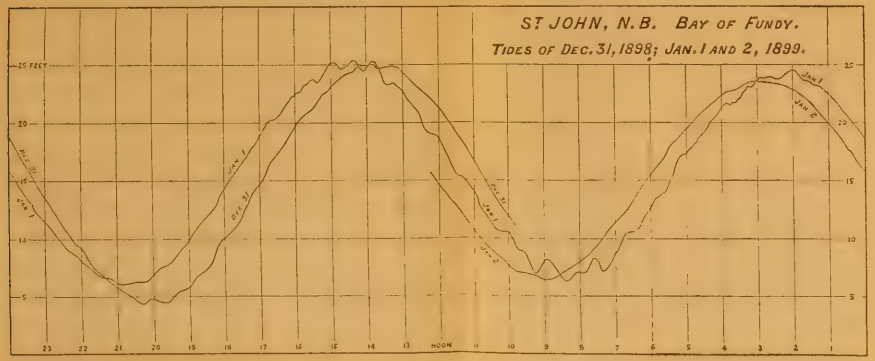
In any theory which may be put forward, a careful distinction should be made between the originating cause of these undulations, and their progress or transmission from one locality to another when once they have been produced. So far as transmission may take place, the examples here given appear to indicate that these undulations do not become magnified in their range, in the same ratio as the main tidal undulation itself does, under the influence of the general features of the coast. The percentages in the above list, have been given with reference to this question. It may also be noted in this connection, that in estuaries where the tide itself increases to the greatest range, as in the St. Lawrence below Quebec and towards the head of the Bay of Fundy, secondary undulations are entirely absent; while on the other hand they are often most evident and persistent where the tide itself has so little range as to be almost effaced; as for example at the Magdalen Islands in the middle of the Gulf of St. Lawrence.

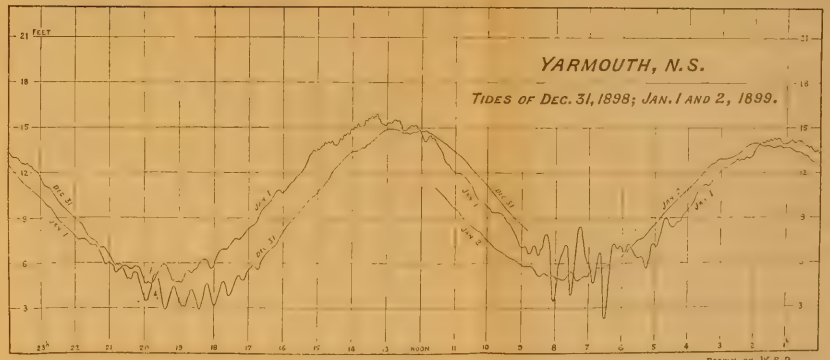
For the study of the interesting problem which these secondary undulations present, it is unlikely that better conditions exist anywhere than on the eastern coasts of Canada. In the region extending from Quebec to Halifax, and from Yarmouth to the Strait of Belle Isle, the tides range from the highest in the world, to so flat a tide as to be almost inappreciable except at the springs; and there is thus scarcely anything left but these undulations and the effect of storm disturbance. In this region, eight principal tidal stations have been established by the Tidal Survey, which is carried on under my direction by the Department of Marine. From these stations, simultaneous tidal record of two to four years has now been obtained; accompanied by meteorological returns from ten places in the region, and supplemented by a complete file of daily weather charts showing the isobars, issued by the Meteorological Service. At three of the tidal stations themselves, barograph records are also secured. The monthly charts issued by the Hydrographic Office of the United States, which show the tracks of all the important storms, are also available for purposes of comparison. In addition to the principal stations, fifteen secondary stations at different points in the region have now been in operation for periods of three or four months during the summer season; and from these, simultaneous tidal comparisons have been obtained on recording gauges.

The material thus available would no doubt enable satisfactory conclusions to be arrived at; but the investigation has not yet been taken up by the Tidal Survey, which has to be confined at present to the preparation of tide tables and other directly practical issues.

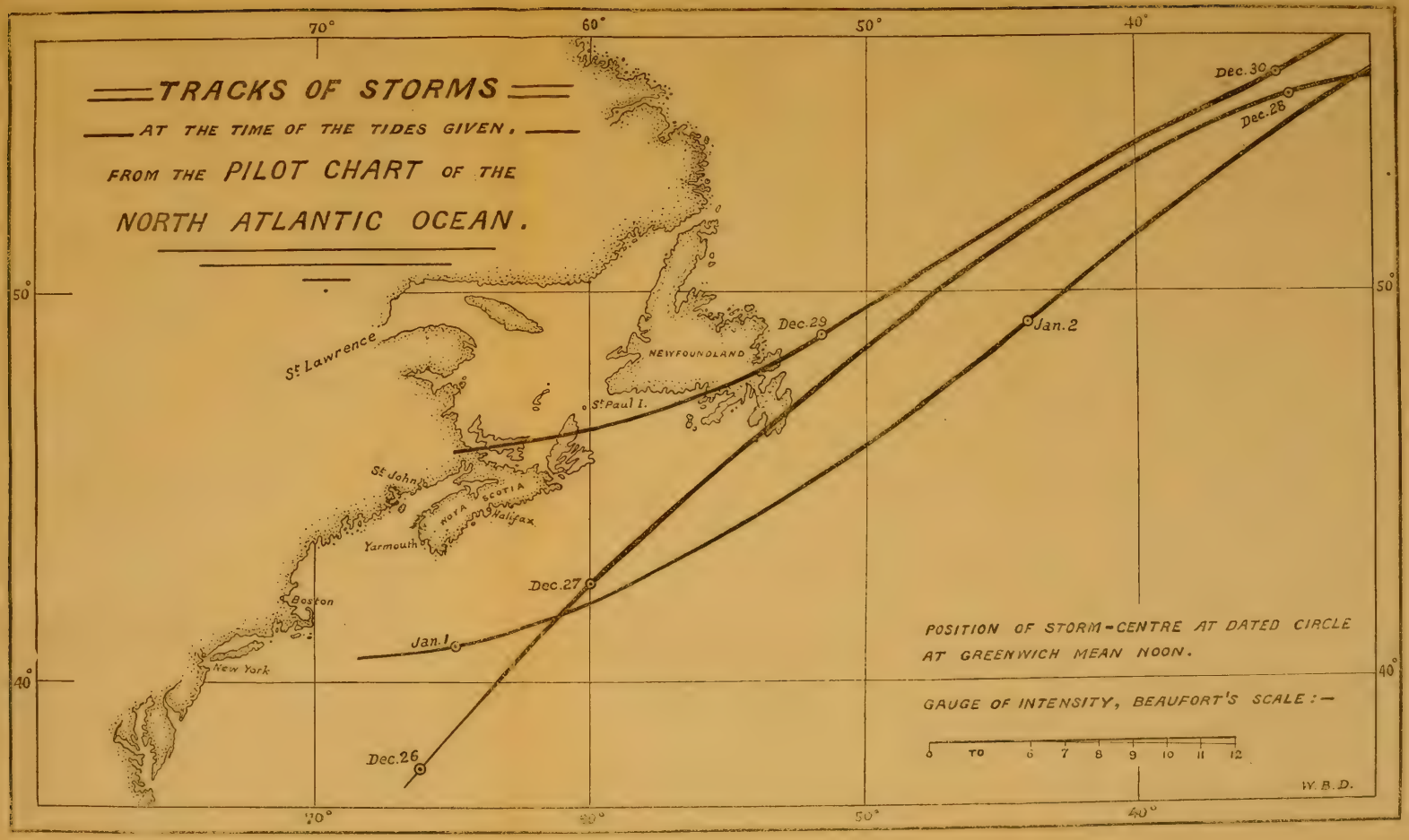

HALIFAX, N.S.
(Raised 3 feet)
(Lowered one foot)
Jan. 2
Jan. 1
Dec. 31
9 feet


St Paul Island, N.S.
In Cabot Strait.
Jan. 1
Dec. 31
Jan. 2
9 feet


St John, N.B. Bay of Fundy.
Tides of Dec. 31, 1898; Jan. 1 and 2, 1899.
Jan. 1
Dec. 31
Jan. 2
25 feet

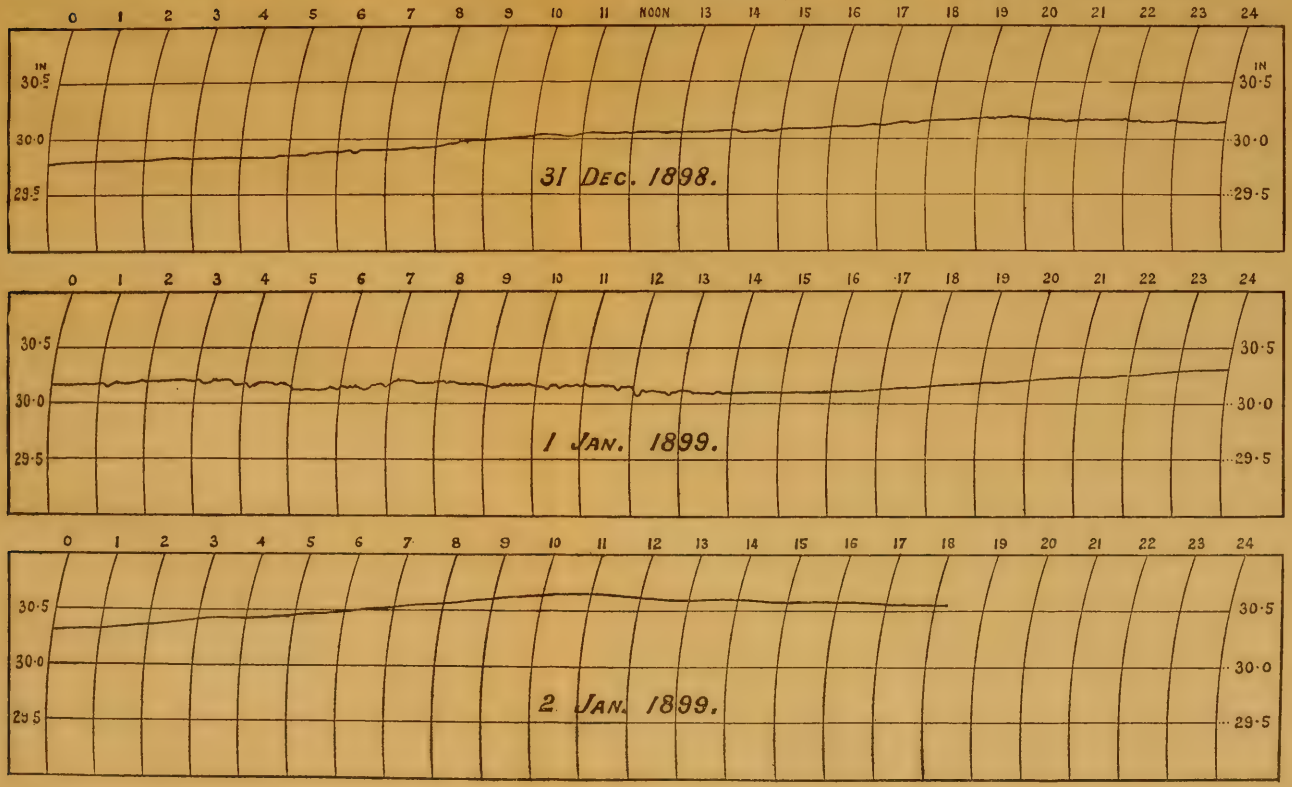

Yarmouth, N.S.
Tides of Dec. 31, 1898; Jan. 1 and 2, 1899.
Dec. 31
Jan. 1
Jan. 2
21 feet

Drawn by W.B.D.


TRACKS OF STORMS
AT THE TIME OF THE TIDES GIVEN.
FROM THE PILOT CHART OF THE
NORTH ATLANTIC OCEAN.
70°
60°
50°
40°
50°
40°
St Lawrence
NEWFOUNDLAND
St Paul I.
St John
NOVA SCOTIA
Halifax
Yarmouth
Boston
New York
Dec.26
Dec.27
Dec.29
Dec.30
Dec.28
Jan.1
Jan.2
POSITION OF STORM-CENTRE AT DATED CIRCLE
AT GREENWICH MEAN NOON.
GAUGE OF INTENSITY, BEAUFORT'S SCALE:—
0 TO 6 7 8 9 10 11 12
W. B. D.

BAROGRAPH RECORD AT ST JOHN, N.B.

(BAROGRAPH AT 116 FEET ABOVE MEAN SEA LEVEL.)



ROYAL SOCIETY OF CANADA

TRANSACTIONS

SECTION IV.

GEOLOGICAL AND BIOLOGICAL SCIENCES

PAPERS FOR 1899

I.—*Presidential Address: Canadian Geological Nomenclature.*

By R. W. ELLS, LL.D.

(Read May 24th, 1899.)

In attempting a brief review of Canadian Geological Nomenclature, it may be stated first of all, that no attempt will be made at a thorough exposition of the subject, in all its details, since this would be a manifest impossibility, and could only be done by extending the limits of this paper to undue lengths. The literature of the present day, relating to the geology of Canada, has now become so extensive that the consideration of the principal points alone would require an amount of time not at our disposal. I have thought, therefore, that it would be unwise to attempt anything beyond the merest outline of some of the leading features connected with the history of its development, and will give merely a cursory glance at some of the interesting problems which are everywhere presented for our consideration in all parts of the Dominion. The discussion of many of these questions will moreover be found in the various scientific journals of Europe and America.

The developments in the nomenclature of the science of geology have progressed so rapidly in this country that but few, and of these, only those most deeply interested in the question, have made themselves familiar with the many changes which have been made in this branch during recent years. New names have been added to the geological scale as the study of the rock formations has progressed, some of which merely serve to indicate peculiarities of local development, while others deal with whole groups of formations, and, as a consequence, many of the rock divisions which, under their old names, were supposed to be quite readily understood, have, as a result of this multiplication of terms, become almost unrecognizable.

It will be admitted by every one familiar with geological investigation, that a thorough system of nomenclature is essential to the proper understanding of geological problems, quite as much as in any other branch of science. This fact is also very clearly established, that, as the study of our rock formations extends, and our knowledge of the relations of the various groups increases, the tendency to multiply names, by which the several divisions may be readily recognized, must also increase. With this increase in our knowledge also erroneous views of structure will be removed, and portions of one formation or even system will be transferred to some other position in the geological scale; so that,

with new interpretations of structure, it is often extremely difficult to restrain the tendency to make the changes in nomenclature keep pace with the changes in one's opinions, as regards structure and relations of the various rock masses.

The nomenclature of Canadian Geology dates back for nearly eighty years. Prior to that time but little was known as to the rock formations in this country from the scientific standpoint. Brief notes had appeared in some of the journals of early explorers belonging to the Hudson's Bay Company in the far north, but otherwise the geological structure of this country was practically unknown. An entirely fresh field for research was presented, a field abounding in the grandest and most complicated investigation.

Comprehensively speaking, the subject of Canadian Nomenclature may be considered in the order of time under three heads. Of these the first relates to the earlier years of scientific investigation, and may be held to include the period between the year 1820 and the establishment of the Geological Survey of Canada, in 1842. In this the nomenclature is essentially the same as that employed by the British Survey, since the explorers of that early date received their scientific training in the British school.

The second period may be said to begin with the appointment of Sir W. E. Logan as director of the Geological Survey, which was organized by the joint governments of Ontario and Quebec in the year last mentioned. While some of the original terms, adopted from the British Survey, were still retained by Logan to distinguish the broad groups or systems, it was found more convenient to adopt the scale of formations which was at that time in use by the Geological Survey of the State of New York, where, at a comparatively early date, the nomenclature had been well developed, especially as regards the Palæozoic formations.

The third period, which may be said to have its rise in the introduction of the purely Canadian terms Laurentian and Huronian, early in the second half of the century, has, through the detailed examination of the geological structure of the Dominion, resulted in establishing a nomenclature largely Canadian in character. Many of the terms thus introduced have, however, a purely local significance, while others have been applied to large groups of strata. On the broad lines however, the names adopted for systems, which were established by the British Survey, from the Cambrian upward, are still maintained; while in the case of the Palæozoic formations, the terms originally employed in the New York Survey are continued in use as best meeting the requirements of the science in Canada.

The earliest information relating to the Geology of Canada is apparently found in the journals of Sir John Franklin and Sir John Rich-

ardson, which date back as far as the year 1820. In these no attempt is made at a geological nomenclature, other than the use of the term Primitive, which was employed to denote the old series of crystalline rocks ; while, of the other formations, the names were generally derived from the nature of the rock itself, which was described simply as a slate, trap, shale, etc. But little detailed work was done in these northern and western areas for many subsequent years; since the district lay too far removed from the usual beaten track of exploration, and there appeared to be but slight inducement on the part of those engaged in scientific investigation, in view of the interesting problems nearer home, to incur the unnecessary expense and hardship involved in the effort to penetrate what was, for many years, regarded as a vast frozen wilderness. The history of geological investigation in this field and the results, reduced to a scientific basis, have been concisely summed up by Dr. G. M. Dawson in the volume of the Geological Survey publications for 1886, under the title of "Notes to accompany a Geological Map of the Northern Portion of the Dominion of Canada, East of the Rocky Mountains."

In the broad sense Canadian geological investigation, during the last half century, may be divided into two principal spheres of action, viz., that which pertains to the rocks of the great Archæan complex, with its vast series of overlying Palæozoic sediments, reaching upward in the geological scale to the Triassic formations, the area of which may be roughly said to include that portion of Canada, east of the Red River of Manitoba, which marks, practically, the eastern limit of the great prairie country; and secondly, that which relates to the structure of the great plains, the Rocky Mountains and the Pacific Coast district, together with the vast area of the northern and Arctic basin. Geological investigations were, however, in progress in the eastern or Atlantic area long prior to the commencement of the detailed study of the rocks of the western district, and the eastern area has, for many years, been the great battle ground for geological controversy, on which some of the most intricate questions of structure have been encountered and, in many cases, satisfactorily settled. In this paper, however, it is proposed to restrict the discussion of the nomenclature of the subject to the first mentioned or eastern area alone.

Among those who early began the study of the rock formations in this portion of the Dominion, the names of Bigsby and Gesner stand out prominently as pioneers in this line of investigation. Of these the former commenced his labours on the formations about Lake Huron as early as 1819, and these were carried on, in this district, for several years. Later, his attention was directed to the study of the formations along the lower St. Lawrence River, more especially in the vicinity of the city of Quebec.

Gesner appears to have commenced his studies on the geological structure of his native province, Nova Scotia, not far from the same time, but probably a little later, since his first publication on the subject appeared in 1836, in which he sketches the distribution of the several formations over the entire province. Bigsby's opportunity arose from his connection as medical officer with the British force, engaged in the delimitation of the boundary between Canada and the United States; while Gesner's work was done, as he says in the preface to his book, in the intervals snatched from the pursuit of an arduous profession, and in a country often difficult to traverse. That his work was largely a labour of love is clear; since he remarks also as regards his volume, that it had not been prepared with leisure and retirement, but under the annoyance of perpetual interruption, while his notes were written out during the silent hours of midnight, when the labours of the day, but not the fatigues, had departed.

The writings of both men show them to have been careful observers, and the information contained in these earliest of our contributions to geological science presents many points of great interest. As might be inferred from the limited advance made in the science of geology during the first quarter of the century, the nomenclature of the subject at that time was not extensive. The attempt to study in detail the successive formations of the earth's crust had only been begun a few years previously by the formation of the Geological Society of London, and the rivalries of the two great schools, led respectively by Werner and Hutton, had scarcely come to an end.

Naturally as the first students of Canadian geology received their training from English sources, the terms there employed as regards the nomenclature of the science were applied, as far as possible, to the various rock formations found in this country. We find, therefore, in the writings of Bigsby, the terms Primitive, Transition and Secondary, names which were used originally by disciples of the Werner school. In his investigations on the several varieties of rocks, found in the vicinity of Lake Huron, the term Primitive was employed to designate the great series of gneisses, granites and greenstones which are now known largely under the names Laurentian and Huronian, and this broad early classification remained in force for more than twenty years.

Under the term Transition was included a series of hard sandstones and quartzites, with certain peculiar conglomerates, which in the Lake Huron basin have since been designated the Jasper conglomerate; while in the third division, or group of Secondary rocks, were placed the limestones of the Manitoulin Island and of the St. Lawrence and Ottawa basins, which contain an abundance of fossils and are now known under the head of Cambro-Silurian and Silurian sediments.

The earliest reports of Bigsby appeared in the journals of the Geological Society of London in 1820 and 1823. The nomenclature employed by him in the west was also that adopted largely by Gesner in the east, and, in fact, by most workers in the field of geological research for some years. Gradually, however, the original classifications of Werner gave place to other views of nomenclature, and a new arrangement was proposed, in which the whole series, from the oldest to the newest, was arranged under the heads Primary, Secondary and Tertiary. In this scheme the Primary rocks corresponded closely with those which had been styled Primitive in the original scale; while the Secondary included those of the original division of that name, together with much of what had been styled Transition.

As regards the rocks included in the Primary, they are stated to closely resemble in character those which pertain to volcanic masses, and to indicate that they were elevated from the interior of the earth in a state of fusion, or in a fluid and elastic condition; while of the Secondary rocks, in addition to their position as always above the Primary, they were supposed to have a regular and parallel arrangement. Some portions contain pieces of pre-existing rocks, while the strata often hold organic remains, the whole series showing that they were deposited by the agency of water. In this old classification the Secondary included all from the summit of the Primary to the top of the Chalk group; while the Tertiary included all above that division, in which the remains found presented a general similarity to the animals now occupying the earth.

In addition to these three great divisions, a fourth was instituted and styled the Isolated rocks, in which group were placed the masses of uncertain origin, including many of the greenstones, basalts, &c. This scheme of nomenclature may be said to represent our knowledge of this branch of the subject for the first third of the century.

NOVA SCOTIA.

Presumably the first description of the rocks of Nova Scotia, from the scientific standpoint, is contained in a somewhat lengthy paper, published by Messrs. Jackson and Alger, in the American Journal of Science, in 1828-29. This was illustrated by a sketch map, showing the distribution of certain groups or formations, principally of the northern and western portions of the province, and this is probably the first geological map issued for the eastern provinces. Especial attention was directed to the trap formation of the Bay of Fundy, but much information was also given regarding the coal measure rocks of Cumberland and Pictou counties, and the gypsum deposits of the south side of the Basin of Mines, while a good description of the deposits of iron ore in

the Annapolis Valley was presented. No attempt was here made to indicate a nomenclature for the horizons of the different formations of the province, other than the use of the term Primitive for certain granite masses, which are a portion of the great central area, and the term Transition, applied to some of the altered slates, which are in contact with these at different places. The terms trap, sandstone, and slate, are employed, and the paper is of considerable value as relating to the distribution and mode of occurrence of some of the leading economic minerals.

In the meantime Gesner, possessed with an ardent love of geological pursuits, and having a mind well fitted to correlate the various phenomena found in the rocks of the Atlantic provinces, had been quietly pursuing his studies of the complicated problems there presented. The results of his first observations appeared in a treatise on the Mineralogy and Geology of Nova Scotia in 1836, already alluded to. In this volume the nomenclature was arranged under somewhat different heads from those given by Bigsby for the rocks of the west. He classified the various groups into districts, which were practically named from the general character of the rocks peculiar to each. Thus from the predominance of granites along the Atlantic coast of the province, he placed his lowest division, which he styled the Primary district, as a belt extending from the southwest extremity, along the whole eastern side of the peninsula of Nova Scotia to the island of Cape Breton. A second belt, in which the predominating rocks were clay slates, he outlined for its whole length, through the centre of the province, regarding them as newer than the rocks of the Primary division. This area he styled the Slate district. It was followed northwesterly by the great series of reddish shales, slates and sandstones, which now include formations from the Silurian to the Trias, both inclusive, and this following out his scheme, he termed the Red Sandstone district. In this also was included what is now known as the Coal formation; while to the great ridge of volcanic rocks such as basalts, diabase and amygdaloids, he assigned the name Trap district. This system of nomenclature, it will be observed, was based upon the physical and lithological characters, and largely upon the predominant rock masses in each.

In this volume of Gesner's a small map of the province appeared, showing the delimitation of the several divisions as then understood.

In 1842, Sir Charles Lyell made a tour of the northern portion of the province of Nova Scotia, with the object of studying the geological structure of the rocks in that district. In company with Gesner and J. W. Dawson he examined in some detail the rocks which had been grouped by Gesner in the Red Sandstone division ; and as a result these

were separated into three portions, styled respectively the upper Carboniferous, the Productive coal measures and the lower Carboniferous or Gypsiferous formation. The latter of these Lyell placed in its true position below the coal measures, while the soft red sandstones, now regarded as Trias, he held to belong to an upper series. This visit of Lyell was, therefore, of much importance, as determining, with greater accuracy, the horizons of the sedimentary rocks belonging to the Carboniferous period. The results of his investigations appear in his book "Travels in North America," published in 1845.

Following closely on the visit of Sir Charles Lyell, we find among the early workers in provincial geology the name of Mr. R. Brown, who investigated certain problems of great economic importance, in connection with the structure of the Cape Breton coal fields. Mr. Brown apparently followed the nomenclature for the divisions of the Carboniferous proposed by Lyell during his visit to this province, and the results of his study of these formations appeared in the Journal of the Geological Society of London in 1843.

In the same year Gesner presented a paper before the Geological Society of London, in which a somewhat different nomenclature was adopted, and the arrangement of the several divisions presented an aspect more in accord with what prevails at the present day, showing a manifest advance in the science. In this paper the terms Silurian and Devonian or old Red Sandstone, which had recently come into use on the British Survey, were adopted, as also that of New Red Sandstone. In the same year also Sir William Dawson, who had accompanied Lyell in much of his exploration in Nova Scotia, published a paper in the Journal of the same society, in which the rocks of the sandstone district were arranged in the order proposed the preceding year, by Sir Charles Lyell, and the terms Productive coal measures and lower Carboniferous or Gypsiferous formation were thus employed in connection with the geology of the eastern provinces.

In a second volume by Gesner, on the "Industrial Resources of Nova Scotia," published in 1849, it will be seen that the nomenclature of the subject has again been advanced several steps. In this work the rock formations are arranged under seven heads, viz.: 1st, granite or hypogene rocks, which include the granite masses of the coast area, syenites, traps, etc.; 2nd, the stratified non-fossiliferous rocks, which were classified as probably Cambrian; 3rd, the fossiliferous clay-slates, with greywackes, described under the head of Silurian; 4th, the overlying series to the base of the Carboniferous, which are now regarded as Old Red Sandstone or Devonian; 5th, the Carboniferous or

coal formation ; 6th, the New Red and the intrusive or igneous rocks associated with these, the whole being succeeded by the drift or boulder formation. In connection with his paper of 1843, Gesner also published a geological map of the province, which is presumably the first detailed map of the kind issued in Canada.

It will be seen, therefore, that, by the end of the first half of the century, the nomenclature of the subject had, in the eastern provinces, begun to assume a fairly consistent shape. Of Gesner's divisions and horizons it may be generally said that in large part the determinations, then made on the broad scale, have been fairly well sustained by the more recent investigations in the district, though the delimitation of boundaries has been largely modified as the result of the detailed work of the last thirty years in the field. It, however, establishes the fact that in Dr. Gesner, the province had a geologist of no mean order, whose grasp of the difficult structure, presented in connection with the geology of many portions of Nova Scotia, may be regarded, for that early time, as wonderful.

In connection with his work in this province, Gesner also from 1838 to 1843, at the request of the New Brunswick Government, contrived to make a comparatively close study of the rock formations in that province. The results of these examinations appeared in five reports, of great interest, in which the terms employed to designate the various groups, corresponded very closely with those used in the geological descriptions of the adjacent province. A brief summary also appeared in a volume by this author, entitled "New Brunswick," which was published in 1847; but in none of these is our knowledge of the nomenclature perceptibly advanced beyond that already indicated. In 1850, the work of Gesner, in New Brunswick, was supplemented by that of Dr. James Robb, at that time a professor in King's College, Fredericton, who published a short memoir as a result of certain explorations in portions of the province. The report was issued in connection with a report by Professor Johnston, on the "Agricultural Industries of New Brunswick," and was based largely on the previous work of Gesner, though some new details were introduced, and certain corrections in the horizons were made. The terms Cambrian and lower Silurian were here apparently employed for the first time in the geological descriptions of this province; and some new points were brought forward, following the interpretations of Sir Charles Lyell, in regard to the structure and relations of the Carboniferous and associated Devonian strata. This report of Dr. Robb was also accompanied by a geological map of New Brunswick which is also the earliest of the kind issued for this portion of the Dominion.

While the work of Logan as Director of the Geological Survey of Canada, extended from 1842 to 1869, or for more than a quarter of a century, but little time was devoted by himself or by his associates on the staff to the unravelling of the complicated structure presented in the rock formations of the Maritime provinces; since, prior to Confederation in 1867, these portions of the Dominion did not come under the operations or the direct work of that Department. Almost the first work however, done by Logan, on his assuming office in his new sphere of labour, was the measurement of the important section of Carboniferous strata, represented by the cliffs of the Joggins shore, in western Nova Scotia, near the head of the Bay of Fundy ; where the swift rushing tides of many centuries have exposed a series of clearly cut strata, many miles in extent, and have furnished probably the best opportunity anywhere existing for the study of the relations and characters of this important division of our rock system. The aggregate thickness of strata here measured by Logan in 1843, amounted to 14,570 feet, the rocks forming a continuous ascending sequence from the lower Carboniferous at the base to the upper Carboniferous at the top. This celebrated section has ever since remained, under the name of the "Joggins Section," as a basis of classification for the rocks of this great system in the eastern provinces, where they have a wide development over thousands of square miles.

From the time of Gesner in 1849, for nearly or quite a quarter of a century, the unravelling of the geological structure, both in New Brunswick and Nova Scotia, was carried on by local geologists. Subsequent to the work of Gesner in the former province a large amount of valuable work was done in this field by Sir William Dawson, which has been summed up in his celebrated volume "Acadian Geology" and in the several supplements thereto. This book has for many years been a standard classic for this field of scientific research. Another name, that of Dr. Honeyman, will also be largely associated in the attempt to ascertain the true relations of the rock formations in the Atlantic area.

Prior to Confederation the work of the Geological Survey did not extend east of Quebec. Shortly after the admission of the eastern provinces however, or about 1868, work was undertaken in the Nova Scotia coal fields by Logan and Hartley, and has been carried on continuously by the officers of the department to the present time. In connection with this more recent work there has been introduced a number of names, most of which relate chiefly to certain peculiarities of local development; and the relations of the several groups to which these have been applied have been productive of much controversy. Of

these terms that of pre-Cambrian has been given to certain old crystalline rocks which were found to underlie the recognized Cambrian of the coast or the gold-series, and which were found to strongly resemble certain portions of the Laurentian or Huronian of the western provinces.

Among the local names which have come to be recognized in this province, more especially in the Palæozoic formations, may be mentioned, the Arisaig series, the Cobequid and Wentworth, Windsor and Horton, Riversdale, Nictaux and New Canaan, all of which are names locally applied, and several of which undoubtedly refer to rocks, practically on the same horizon, but found at points widely separated. The granites, formerly supposed to represent the rocks of the Primary division, and regarded as pertaining to the oldest system, have now been placed among the intrusive rocks and at a horizon near the Devonian. The peculiarities of each of the series enumerated are too many to state in a paper of this nature, but it may be generally said that the study of the different formations, by the Geological Survey in this district, has resulted in determining their horizons and their true relations over the greater part of the province.

NEW BRUNSWICK.

In New Brunswick, however, while the names of Robb and Gesner must always be associated with the literature of the subject to a certain extent, as the first interpreters of the problems there presented, the great work of determining the rock structure of the province devolved largely upon three men, Bailey, Matthew and Hartt, whose names must always stand prominent in this connection. From 1850 to 1860 the only references apparently to geological research in this area appear to be confined to the first volume of the Acadian Geology, 1855, but this reference relates rather to economic questions pertaining to portions of Carboniferous rocks. The confused assemblage of rocks in the southern part of the province still remained in a most unsatisfactory condition as regards their proper arrangement in the scale; and formations of widely separated horizons, were included in one or two broad divisions, in which fossiliferous and crystalline strata were blended in apparently inextricable confusion.

The investigations of Bailey, Matthew and Hartt, in 1860 and for several years subsequently, soon bore fruit, and resulted in considerable additions to the nomenclature of the science. In a paper by Matthew to the Canadian Naturalist in 1862, as also in the Journal of the Geological Society in 1861-62, the rocks in the vicinity of St. John

were arranged anew, by the introduction of the terms Portland, Coldbrook and St. John groups, the two first of which included a large part of the rocks pertaining to the oldest or crystalline series, while the latter was applied to certain fossiliferous sediments which contained a peculiar fauna, regarded as the oldest yet discovered in the rocks of the province. The names Bloomsbury, Little River and Mispec were also employed to designate a great series of slates, sandstones, shales and conglomerates, along with certain igneous and crystalline rocks, whose exact horizon could not, at that date, be definitely determined, other than that they were beneath the Carboniferous limestones. In a report by Bailey "On the Geology of the Province of New Brunswick" in 1865, the positions of these various groups was more definitely outlined. The three last named divisions were stated to probably represent portions of the Devonian, the St. John group was regarded as a part of the lower Silurian, while the Portland and Coldbrook groups were considered as the representatives of the Laurentian and Huronian of Ontario, of which the first was regarded as representing probably the lowest member of the crystalline series. In this report also the name Trias was first applied to designate certain areas of soft red sandstone found along the south shore of the province.

The nomenclature was also shortly prior to this date advanced by the employment of the term Kingston group, which was applied to a series of formations of uncertain age, some portion of which, it was thought, might belong to the Devonian, while other portions appeared to be more closely related to the upper Silurian system.

The term Primordial was also, in the report just noted, employed by Hartt as the equivalent of the St. John group, in consequence of finding fossils in some of the black slates of St. John city, which it was then supposed might represent the lowest zone of fossiliferous sediments. The further study of the rocks of this group resulted in their correlation with the Menevian of Wales. They have since been elaborated under the name of the St. John or Acadian group by Matthew in a series of papers before this section of the Royal Society.

The report of Professor Hind on the Geology of this province, which appeared in 1865, added but little to the nomenclature of the subject. Certain formations of slate and sandstones in the northern area were made the equivalents of a new division, styled "the Quebec group" in that province, but the other terms already used to designate the formations in the southern part of the province were adopted throughout this report.

The conclusions arrived at by Matthew and Bailey from the study of the rocks in southern New Brunswick, were summed up in an

elaborate report to the Geological Survey in 1870-71, in which the nomenclature as arranged up to that date is given. In this report the authors were to some extent assisted by Dr. Sterry Hunt, through whose help portions of the mixed formations, hitherto included in the Bloomsbury and Little River divisions of the Devonian, were removed, and these more crystalline or metamorphic portions were placed in a new group, which was styled the Coastal, from the fact that these rocks were found largely near the coast of the Bay of Fundy.

In this report the lowest division of the crystalline rocks was held to conform most closely in its details to the Laurentian of the Canadian Survey. This series was divided into a lower and an upper, the former of which was regarded as the equivalent of the lower or Fundamental Gneiss of the Ottawa district, while the latter was supposed to represent the limestone and gneiss of the Grenville series of Quebec.

The Huronian was now made to include three divisions, viz., the Coldbrook, Kingston and Coastal, the former of which retained its original place, while the Kingston was transferred from the Silurian or Devonian, and the new division, the Coastal, was added, as just stated, as the result of the separation of certain crystalline rocks formerly regarded as Devonian, but now clearly recognized as beneath the fossiliferous St. John group.

For the slaty and fossiliferous rocks several new terms were devised. Of these a peculiar group of sediments, found in the southwest part of the province, in which, however, the fossil evidence was obscure, was designated as the Mascarene group, the exact horizon of which could not at that date be determined since some parts bore a lithological resemblance to certain members of the Huronian, while other parts appeared to more nearly approach the Silurian. The name of the group was derived from the locality where this peculiar series was first studied, viz., the Mascarene shore in Charlotte county.

For the Devonian formations the names of Dadoxylon sandstone, Cordaite shales and Mispec group were established, while an overlying series of reddish sandstone and conglomerate, which, from their stratigraphical relations, and from their fossil plants had hitherto been regarded by most observers, as the upper member of the Devonian system, under the name of the Perry sandstone, and which unconformably overlies the other members of the Devonian at several points, was regarded by the authors of the report in question, chiefly on lithological grounds, as more closely related to the lowest portion of the Carboniferous system. The Devonian horizon of the Perry sandstone was established largely by the work of Sir William Dawson on the evidence of fossil plants.

In addition, several large and important areas of slaty rocks were located, which were apparently almost destitute of organic remains, and the horizons of which could not therefore be definitely determined. These were included under a general term pre-Carboniferous rocks, but were subsequently designated by the name dark and pale argillite series, the names depending principally upon the prevailing shade of the slate of which the series was largely made up. As for the Carboniferous formations the rocks were classified as lower Carboniferous, and Middle and Upper coal formations, while the Triassic or New Red sandstone formed the summit of the geological scale in this province.

Since the date of the report just quoted, the geological formations in this province have been worked out in great detail, though but slight additions have been made to the nomenclature of the subject. The tabulated list of formations, used in conection with the sedimentary rocks of the western province has not as yet been found to be applicable, to any great extent, to the formations in the eastern provinces. This may be, to some extent, due to a general lack of fossils in some of these eastern formations, but also probably to some extent to differences in the mode of deposition, as is the case in the province of Quebec, where the formations west of the great Champlain fault present marked differences in physical character, as also in the character of their fossil contents, as compared with rocks of presumably similar horizons lying to the east of that break. The comparatively recent finding of fossils in different parts of the northern area of New Brunswick has, however, resulted in correlating, somewhat more closely, certain of the formations belonging to the Ordovician about the horizon of Trenton.

The nomenclature of the subject in this province has also recently been enlarged by the employment of the term Etcheminian, which has been applied by Matthew to certain fossiliferous sediments, found beneath the lowest zone of the recognized Primordial. The rocks so designated may, therefore, be supposed to belong to the lowest horizon of the Cambrian or to the most recent portion of the pre-Cambrian formations.

In connection also with the study of the Devonian plant-bearing beds of New Brunswick and eastern Quebec, Sir William Dawson, in 1871, proposed the term Erian as the American equivalent of the Devonian, owing to the fact that the rocks of this system in America have a great development in the vicinity of Lake Erie, in Ontario. This name has not however as yet been generally accepted by geologists, and the original term Devonian is still maintained for the strata of this great system.

In this brief sketch of the development of geological nomenclature in the eastern provinces of Canada, it is manifestly impossible, without enlarging the subject beyond reasonable bounds, to devote more than a passing notice to the consideration of the many changes of opinion which have been expressed by the different writers on the geological structure of this very complicated field of exploration. Many discussions have appeared in the scientific journals, some of which are inspired with the desire to throw more light upon obstruse points, while others are apparently tinged with a spirit of adverse criticism. That changes of opinion should take place as a result of more detailed study of the several geological problems here presented, must always be expected, and such changes should cast no reflection upon the character of the work done by the earlier investigators in this field; since, unless we accept the conclusions arrived at by the pioneers in this or any kindred line of work, as infallible, the study of the relations of the various rock formations, under new and more favourable conditions, and with the appliances of modern investigation, should of necessity, tend to the attainment of more accurate results. Thus the discovery of a mere band of fossiliferous strata in a great series, previously regarded as unfossiliferous, may change at once all previously accepted ideas as to its true relations, while as to the determination of horizons on lithological features alone, very often subsequent careful examination proves the first conclusions to be erroneous. In point of fact, in an area so affected with faults, overturns and other difficulties, such as the presence of large areas of non-fossiliferous sediments, the conclusions arrived at as regards structure should generally be held open to correction as more light is afforded by the detailed study in the field progresses.

ONTARIO AND QUEBEC.

In the old provinces of Canada, which prior to Confederation consisted of Ontario and Quebec, the work of a regularly organized Geological Survey was commenced, as already noted, in 1842, under the direction of Sir W. E. Logan, with whom was shortly after associated Mr. Alexander Murray. The first work of Logan and Murray was devoted to obtaining a broad general view of the geological features of these two provinces, and in order to arrive at this result preliminary excursions were undertaken, often involving much hardship, throughout the generally unsettled area which it was necessary to penetrate. These explorations were carried on from the eastern extremity of the Gaspé Peninsula of Quebec on the east, to the shores of Lake Superior on the west, and in this way the foundations were laid for the subsequent filling in of the detailed structure over many thousands of miles.

As for the crystalline rocks, such as the granites, gneisses, schists and quartzites, with their associated limestones, the old term Primitive still continued to designate this great series. This term, in 1843, gave place to the term Gneissoid and Metamorphic group, the latter being introduced by Murray in that year for the rocks of this series; and these names were continued in use for the crystalline rocks down to 1852-53.

In the Report of the Geological Survey for that year, Logan, recognizing the difficulty of placing such an enormous thickness of rocks, which formed the great series below the fossiliferous sediments, under such a comprehensive title, made use of the term Laurentian, which was designed to include the lower portion of the series, giving as his reason for so doing "that inasmuch as this term Metamorphic was applicable to any series of rocks in an altered condition, and might occasion confusion, it has been considered expedient to apply to these for the future, the more distinctive appellation of the Laurentian series, a name founded on that given by Mr. Garneau to the chain of hills which they compose."

The introduction of this term Laurentian in Canadian nomenclature marks the advent of a new era in the study of the crystallines and the overlying rocks of the St. Lawrence basin. From the enormous development of the former in central and eastern Canada, the opportunities for their study on the large scale are probably much greater than in any other known geological field; and since the early date when Logan applied his historic name to the oldest of our rock formations, the study of their structure and relations has been steadily followed up. Of these old rocks it may be said that their investigation has furnished most interesting and complex problems, which have engrossed the attention, not only of Canadian geologists, but of those in England and the United States as well.

In a small volume, published in connection with the Paris Exhibition of 1855, styled "Esquisse Géologique," the new term Huronian was first applied by Hunt to a portion of these rocks which had been particularly studied in the vicinity of Lake Huron. This name was regarded as partly synonymous with the lower Cambrian of Sedgwick, and it was held to include a considerable part of what in Bigsby's paper of 1820, on this area, was classed as the Transition group. The Huronian rocks of that day comprised a very considerable thickness of schists, quartzites, conglomerates, slates, etc., which were regarded generally as unconformable to the underlying gneiss and granite which had so recently been styled Laurentian. Regarding the earlier views as to the age of these rocks, Sedgwick had, some years previous to the introduction of the term Huronian, stated that they belonged to a horizon below the lowest recognized Cambrian of Wales, and this view was later maintained

by Bigsby, who, in 1862, stated that the Huronian was beneath and distinct from the Cambrian. The name Huronian was first officially employed by Murray in the Geological Survey report for 1857.

It will thus be seen that the lowest members of the crystalline rocks received a distinctive appellation in Canadian nomenclature at a comparatively early stage of the discussion on the geological structure of this country; and these terms have been retained for the rocks which represent our oldest formations to the present day. They have also been generally adopted by the workers in this old field of investigation, who include many of the geologists of the British Islands and of the United States.

Other names have, however, gradually come into use to designate these old formations on a broader scale, or to explain some peculiarity of origin or structure. Among these, relating to the crystalline rocks, may be mentioned Azoic and Archæan, which have been generally held to apply to all the formations beneath the lowest fossiliferous strata. The term Archæan was proposed by Dana, 1874, and adopted by both the Canadian and United States geologists. In this connection Dana says, "the Archæan rocks are the only universal formation. They extend over the whole globe, and form the floor of the ocean and the material of all emerged land when life first appeared. The thickness which they acquired during the long era from the time of the first formed crust can never be known." The term Azoic was proposed by Foster and Whitney in 1851.

Sir William Dawson also employed the term Eozoic to distinguish certain members of the Laurentian series, in portions of which the Eozoon Canadense, regarded by some as the earliest representative of life among our rock formations, was found. This term Eozoic was chiefly confined to the series of limestones, quartzites and associated gneisses which Logan had previously designated the Grenville series, and which afterwards Vennor, from their examination in Hastings County styled the Hastings series, the names in both cases being derived from the localities where these rocks were first studied in detail. The rocks of these two series were regarded as of more recent age than those of the great mass of gneiss and granite which underlay them, and which were held to represent the lowest member of the Laurentian system. The latter therefore received the appellation of the lower or Fundamental gneiss, or from the fact that it was largely developed along the Ottawa River, the Ottawa gneiss.

In the geology of Canada, 1863, Sir W. E. Logan gives a systematic scheme of nomenclature, employed in the publications of the Geological

Survey at that date. In doing so he remarks that "in the names used we have been desirous of availing ourselves, as much as possible, of those which have been applied to well established groups of strata elsewhere, with a view of at once facilitating comparisons of equivalent masses, and of rendering homage to those whose labours have aided us in understanding our own rocks. The investigations which had already been made in the state of New York when the Canadian Survey commenced, had in some degree rendered the stratigraphical nomenclature of that state classic in America, and, while the undisturbed condition of the masses in that part of the state which furnished the local names, rendered the sequence certain, the formations passed from New York into Canada in such a manner that there was no doubt of their equivalence on the opposite side of the boundary. For the subordinate groups of fossiliferous strata it thus becomes extremely convenient to adopt the nomenclature of New York. . . . It is only where a group has not been recognized among the rocks of New York, or where a mass there destitute of organic remains is replaced in Canada by one marked by fossils, that a Canadian name is introduced."

In accordance with the principles thus laid down, we find in the scale of formations established for the volume in question, that, with the exception of the terms Laurentian and Huronian, which were included under the general name of Azoic, and used to represent the lowest of our rock series, the nomenclature of the formations in Canada is largely that of the state of New York.

The literature relating to the fossiliferous sediments was also enriched about this time by the use of the term Quebec Group, which first appeared in 1860-61. This was designed to include certain members of the Lower Silurian; but from the imperfect state of our knowledge of these rocks at that date, it was also made to embrace different areas of crystalline rocks which have since been separated under the head of pre-Cambrian, and which are now generally regarded as belonging to the Huronian series. The rocks of this group were at first arranged under two heads, viz., the Sillery and the Lévis, which were supposed to represent or be the equivalents of the Chazy and Calciferous. This was increased by the addition of the term Lauzon, which was held to apply to a portion of the original Sillery, but this term was subsequently abandoned. The names Lévis, Sillery and Lauzon were all derived from localities near the city of Quebec, where the rocks of this group were first studied; and in the early stages of the discussion these were all supposed to pertain to the Silurian system, reaching as high in the scale as the Medina sandstone of the New York system of nomenclature. In the final settlement of this question the crystalline portion was, as just stated,

separated from the fossiliferous sediments and regarded as pre-Cambrian, while the fossiliferous portion was divided into several horizons, of which the Lévis was regarded as the upper member, and considered as the equivalent of the Calciferous with a possible upward extension into the Chazy or even the lower Trenton, as seen in the rocks of the city of Quebec, while the Sillery and Lauzon divisions were assigned to the horizon of the Potsdam sandstone in part. Other portions of these rocks, separable from the beds near Quebec by a marked line of unconformity, were regarded as properly belonging to the Cambrian system, portions of which may extend down to the lowest member of that system, which may, in Canada and northern New York, be regarded as fixed by the Olenellus zone. This portion, beneath the upper Sillery, in 1863 was referred to the downward extension of the Potsdam group, which was about this date enlarged from a mere formation like the Potsdam sandstone, and made to include all between the Calciferous and the top of the Huronian.

In the middle Silurian the new term Anticosti group was introduced to include a great series of strata on the Island of Anticosti, which had been studied by Richardson in 1857, and which was found to embrace the Niagara, Clinton and Medina formations, while the nomenclature was still further added to by the employment of the term Guelph, which was held to denote the upper member of this system.

The upper Silurian was restricted to two formations only, viz., the Onondaga and the Lower Helderberg, while the Devonian comprised the usual series of formations found in the New York scale. In addition, however, a new division was instituted, known as the Gaspé series, which comprised a great thickness of limestones, sandstones and shales of somewhat uncertain horizon, but which were evidently closely related to the recognized Devonian and Upper Silurian. The similarity of some of these beds in Gaspé to the Chemung and Portage divisions of New York was pointed out by Logan as early as 1844, while the resemblance of the lower or calcareous portion to the rocks known as Lower Helderberg, was also noted. The only member of the Carboniferous series found in Quebec was styled the Bonaventure formation, which is held to directly underlie the middle Carboniferous of New Brunswick, known now generally by the name Millstone-grit.

The great area of slates and limestones found in eastern Quebec, between the Sutton anticline and the boundary of the state of Maine was also, early in the history of the Geological Survey, regarded as largely composed of strata of Silurian and Devonian age, the equivalent or the extension of the Gaspé series. This area has recently been carefully studied, and the formations in that part of the province were found to

include sediments, ranging from the lowest Cambrian to the lower portion of the Devonian. The true Silurian and Devonian rocks of this district were found to occur as small infolded basins, in which the typical fossils of these periods occur, though some of these sediments are in so greatly altered a condition that, without such evidence, they might readily be taken for Huronian rocks. As for the rest, though in certain portions organisms, peculiar to the lower Trenton elsewhere, were obtained, it has not as yet been possible to recognize all the divisions of the geological scale in this area, though sufficient has been learned to make the succession fairly complete for this section of the Palæozoic strata.

The term Taconic employed by Emmons as early as 1841 for certain rocks in the northern portion of Vermont and elsewhere in the district south of the Canadian boundary, has never come into general use in our nomenclature. It applied practically to the same series of formations, of widely different horizons, which were later described by Logan under the head of the Quebec group already referred to.

Returning to the consideration of the oldest rocks in Canada, or the crystalline masses of the Laurentian and Huronian systems, we find our nomenclature increased shortly after the advent of the latter term, by the use of several new words. Thus in the Geology of Canada, 1863, the names Lower and Upper Copper-bearing rocks were devised for a peculiar series of slates, limestones, conglomerates and sandstones, with which were intimately associated masses and dykes of trap (diabase) and amygdaloids, found on the north side of Lake Superior, and concerning the true horizon of which much dispute has since that date arisen. From their lithological resemblance to certain rocks in Nova Scotia and elsewhere portions of these were at one time regarded as possibly of Triassic age. They have also been by some regarded as a portion of the great Huronian series while by others they were held to constitute an uncomformably overlying group. In connection with the upper Copper-bearing rocks several new terms were introduced, among which may be mentioned the Keweenaw, later changed to Keweenian series by Hunt, and the Keweenawian by Major Brooks, of the United States Survey. They have more recently been described under the names Animikie and Nipigon groups; and the evidence from the most recent investigation tends to place these peculiar rocks rather in the Cambrian system than in the Huronian, while the trappean or diabase members of the series may be regarded as newer intrusives or overflows in the slates and limestones of that division. Any fossil remains which have been found in the strata of this group of rocks are too indistinct to be of value in the determination of horizons.

From the fact that so large an extent of the Dominion of Canada is occupied by the oldest crystalline gneiss and granite with intimately associated limestone and quartzite, their study in the field has, from a very early date, presented specially attractive features. In the earliest publications of the Geological Survey, frequent references are made to these old rocks, and so important did the question become, in view of the complicated problems involved in their study, that, in 1853, Logan began a detailed examination of an area along the lower Ottawa, in which the township of Grenville is located, where it was hoped a typical field for the investigation of the principal difficulties encountered might be found. The study of this area in Grenville, and that of the country to the north along the River Rouge, and east in the direction of Morin and St. Jerome, occupied several seasons and resulted in the formation of a scheme of classification for these rocks which, for many years, has been held as the standard by which the whole Laurentian complex has been largely determined. This group of rocks comprising certain gneisses, limestones and quartzites soon became known as the Grenville series, the first descriptions of which appeared in the Report for the year 1857, which were further elaborated in the Geology of Canada, 1863. At this time the Laurentian was held to consist of three divisions, viz., that just described, which was held to rest upon an older series of gneiss and granite, which was styled the Fundamental or Ottawa Gneiss, and an upper member, consisting principally of anorthosite or labradorite rocks, which, from a gneissic structure existing in portions of the mass, and from a supposed overlapping of these upon the crystalline limestones of the Grenville series, was held to represent an altered group of sedimentary strata, and to form a unconformably upper member of the Laurentian.

About the same date on which Logan began his study of the Grenville rocks the examination of a very similar group was undertaken by Murray in the region north of Kingston, more particularly in the county of Hastings. This work, begun by Murray in 1853, was resumed by Macfarlane in 1865, in connection with the occurrence of minerals of economic importance, which were found in that district, and to this work Vennor succeeded in the following year. In his report on the rocks of this area, Macfarlane pointed out the resemblance of certain portions, of what were then denominated the Hastings rocks, to the recognized Huronian of other localities, as evidenced more especially by the occurrence of certain conglomerates. To this view, however, Logan took exception, and would not admit their Huronian age, but supposed that they might represent a higher portion of the Lower Laurentian series than had been met with elsewhere. In a foot note in which Logan expresses

this opinion he further remarks : "that some may be supposed to compare the Hastings rocks with the lower Silurian of eastern Canada, but the micaceous limestones of Hastings more closely resemble the micaceous limestones which run from eastern Canada into Vermont, on the east side of the Green Mountains, and which from their fossils are known to be Devonian. . . . Their relations are at present under examination, and until a sufficient number of facts are collected, it would be premature to remove them from the horizon in which they had been provisionally placed." This horizon, for the rocks in Marmora, Madoc and other places in Hastings County was, from the finding of the new supposed fossil, Eozoon, now regarded as Laurentian.

In 1866 Vennor began the careful detailed study of these rocks in the field, and to these the name Hastings series was now attached. As a result of his investigations they were first arranged into three groups, A, B and C, of which the lower or A consisted of reddish gneiss, with some limestones; the second of hornblende and pyroxenic rocks, with mica schists and epidotic and chloritic strata; while the third was largely made up of magnesian limestones, with slates and quartzites, gneiss and conglomerates. The Eozoon was found in the rocks of the third division, and the resemblance of certain rocks of division 2, to the Huronian elsewhere was pointed out in the report on this district, in 1868 69.

The rocks of this series were studied by Vennor for several years, and the results of his investigations appeared in various reports, extending down to 1877. That for the years 1870-71 summarized the work up to that time, and in this the rocks of the lowest of his three divisions, A, comprising the syenite and granite-gneiss, with crystalline limestones and magnetic iron ores, were regarded as Laurentian, while the rocks of the other divisions were supposed to more closely approach the Huronian. On the whole, however, the conclusions reached in this volume are very similar to those expressed in 1869. In regard to the occurrence of Eozoon, which was supposed from the first to be peculiar to the Laurentian rocks, it was now held to occur, not only in the rocks of this system, but was also found in the upper portion of the third division, which on other grounds might be assigned to the Huronian.

In the report for the next year, 1871-72, our knowledge is not greatly advanced. As regards the position of the several members of the crystalline series as originally proposed by Vennor, the rocks of division B, are now regarded as resting upon the flanks of a granite mass belonging to division A, which Vennor then regarded as an intrusive or eruptive rock, assignable to the close of the Laurentian, or prior to the deposition of the schistose rocks B and C; so that on this evidence the rocks of these two divisions would appear to be newer than Laurentian, and might reasonably be classed as Huronian.

In the report for the next year this opinion as to the relative position of these divisions is maintained; and in the working out of the district to the north and east of the original area in Hastings county the several kinds of gneiss and limestones were arranged in various groups, of which, in 1875, he concludes that the relations are very uncertain, but expresses the conviction that the schists and dolomites of the Hastings series are very similar to certain portions of the Huronian of Logan, and to the crystalline series of the eastern townships of Quebec, usually styled the metamorphic portion of the Quebec group.

In the report for 1876-77, Vennor, having in the meantime reached and crossed the Ottawa River, and connected the rocks of the Hastings with those styled by Logan the Grenville series, sums up all the evidence bearing on the relations of the different members of the crystallines; and as a result divides them into two great series, viz., a great gneiss and syenite portion without limestones, representing the oldest division, the equivalent of the Fundamental gneiss, and a thinner gneissic and schist series, with limestones and with large areas of labradorite rocks. These are overlain by the lower Silurian formations, ranging from the Potsdam to the Trenton.

In the final summing up of Vennor two elements evidently interfered with the enunciation of the relationship which he supposed to exist up to or near the date of his last report. Of these one was the placing of the anorthosites at the summit of the Laurentian years before, on the hypothesis that they represented an unconformable series of altered sediments, overlying the Grenville limestones and gneiss and beneath the recognized Huronian; the other was the presence of Eozoon, which was held to represent the first indication of animal life in the Canadian rocks and to pertain to the Laurentian system. He early recognized the fact that the rocks of the Hastings and Grenville series were of the same horizon, and that these rocks extended continuously from the area near Marmora, where they were first studied, across the Ottawa River and up the Gatineau valley as far at least as the mouth of the Desert River, as well as over much of the country adjacent on either side. But according to the view at that time held as to the composition of the Laurentian, viz., that its upper member consisted of the anorthosite series, it was necessary to include both the Hastings and Grenville series in the Laurentian also. By some these were regarded as a portion of the lower Laurentian, the anorthosites being regarded as the upper member, while by others they were held to form a middle division; so that, although the Huronian aspect of the Hastings series had been repeatedly pointed out by different observers, it was practically impossible under the scheme of classification that prevailed at the time to make any other

disposition of the intervening gneiss, limestone and schist series. This change, from the middle position as regards the divisions of the Laurentian, was not possible till the establishment of the fact some time later, that the anorthosites were an intrusive group of rocks, and entirely distinct from the limestones which they traversed. This did not take place till after the investigations of Vennor in the area north of St. Jerome in 1877, the history of which may be briefly summarized.

The controversies that have been waged with more or less persistence, concerning the relative positions of the several members of the crystalline rocks appear to have been largely brought about by the attempt to reconcile widely diverging views with a hard and fast scheme of classification, which had been devised in the early days of their study in the field. Thus it was apparently taken for granted that the greater part of the Laurentian rocks were originally of sedimentary origin. This opinion was doubtless based on the presence of a bedded, banded or foliated structure visible in the greater portion of the old granite and gneiss formations. It was, however, recognized by Logan, at an early stage of the investigations, that there was a vast underlying mass of granite-gneiss, which was older than the grayish and often garnetiferous gneiss, limestone and quartzite series. What appears to have been the chief misleading influence in the discussion was the supposition that the anorthosites, which also in places presented a foliated structure, represented altered sediments.

In the supplementary chapter on the Laurentian, given in the Geology of Canada, 1863, the relation of the anorthosites to the limestones and associated gneiss of the Grenville series is considered. The interruption of the limestone bands of Morin and of the adjacent townships, is clearly pointed out, but the eruptive nature of the contacts, at this place, was not at that time distinguished. It was assumed from the relations of the two series, as there seen, that there was a strong probability that the "anorthosite rock overlies the whole Grenville series unconformably, and that the mass of it on the west side of DeSalaberry is an outlying portion." Further it is there stated that "if, on exploration to the eastward of the Trembling Mountains, it should be further ascertained that the two inferior bands of the Grenville series disappear on reaching the margin of the anorthosite, it may be considered conclusive evidence of the existence in the Laurentian system of two immense sedimentary formations, the one superimposed unconformably on the other, with probably a great difference in time between them."

From the laying down of this principle then, as to the structure of the several divisions of the Laurentian system, much of the subsequent

discussion on this subject has arisen. The sedimentary origin of the Anorthosites was maintained for some years, in fact till after 1878 when the first statement on the part of the officers of the Geological Survey, indicating a change of opinion in this direction, appeared. The accepted relationship of the rocks of the anorthosite division to the rest of the Laurentian proper was however called in question by Dr. Selwyn, in a report for the year 1877-78, where in propounding a new scheme of classification for the Canadian rocks, he recast the several divisions of the Laurentian and Huronian, confining the former strictly to the great masses of granite-gneiss which were devoid of all traces of sedimentation in the form of limestones, slates and conglomerates, while in the Huronian he placed the rocks of the Hastings and Grenville series, as also the supposed upper Laurentian or Norian, a name which had been applied by Hunt to the Labradorite rocks.

In this scheme Selwyn also included in the Huronian the typical or original Huronian of Lake Superior and the conformably—or unconformably, as the case may be—overlying upper Copper-bearing rocks, the altered Quebec group, and certain areas between Lake Metapedia and Gaspé, as well as the Cape Breton, the Nova Scotia and New Brunswick sub-crystalline and gneissoid groups.

The opinion that these peculiar anorthosite rocks were not sedimentary in their origin had, however, been clearly expressed by various geologists, both in England and America, at a very early date. Among the earliest and strongest supporters of their igneous nature may be mentioned Macculloch, who had studied similar rocks in the western isles of Scotland, and Emmons who had investigated their relations to the other crystalline rocks in the state of New York. Packard also, in a paper before the Boston Natural History Society in 1868, maintained their igneous rather than their sedimentary origin; while Hitchcock, in his studies of similar masses in the White Mountains, came to the same conclusions, and Kjerulf and Dahl, from their examinations in Norway of similar rocks also expressed their convictions that they were igneous in their character.

Dr. Selwyn, in his paper of 1877, in discussing the question of the anorthosites, and their relations to the gneiss and limestone series, also quotes Professor James Hall, of the New York Survey, as stating that "the limestones of Essex and adjoining counties in New York state, do not belong to the Laurentian system, either lower or upper." "The facts on which a part of this conclusion is based, viz., the unconformity of the Laurentian limestone series to the lower orthoclase gneiss, agree with those of Mr. Vennor, and there is, I think, but little doubt that all these crystalline limestone groups, that is, those of Essex and St. Law-

rence counties in the United States, and Rawdon, Grenville and Hastings in Canada, are parts of one great series, and at present I see no evidence for excluding from this series the associated Norian rocks. Whether this series as a whole will eventually retain the name Upper Laurentian or whether it will be found more convenient to designate it the Huronian system, does not much signify."

Referring again to the question of the origin of the Labradorite rocks in 1877-78 Dr. Selwyn remarks, "if as is admitted—which in view of the usual associations of Labrador felspars, is the most probable supposition,—that these anorthosite rocks represent the volcanic and intrusive rocks of the Laurentian period, then also their often massive and irregular, and sometimes bedded character, and their occasionally interrupting and cutting off of the limestone bands as described by Sir W. E. Logan, is readily understood by any one who has studied the stratigraphical relations of contemporaneous volcanic and sedimentary strata of Palæozoic, Mesozoic, Tertiary and recent periods. Chemical and microscopical investigations both seem to point very closely to this as the true explanation of their origin."

As the study of these rocks proceeded, further light on their relations was obtained. In several cases the contacts between the anorthosites and the limestones were found to be similar to those observed in the case of true dioritic masses. Vennor pointed out several cases of such contacts in his summary report for 1877 in the country north of St. Jerome, and these were regarded at the time as so conclusive, that Dr. Selwyn upon consideration of these points was forced to state that "if the foregoing determinations of Mr. Vennor were correct, they seem very conclusively to prove, what I have already stated to be my opinion, viz., that the Labradorite or Norian rocks of Hunt do not constitute an unconformable upper Laurentian formation, but occur in part as unstratified intrusive masses and in part as interstratifications with the orthoclase gneisses, quartzites and limestones of the Laurentian system as developed in the Grenville region and mapped by Sir W. E. Logan."

Concerning the later investigations on this series of rocks it may be said that the recent work of Adams on the origin and relations of the anorthosite masses, previously supposed to represent the upper member of the Laurentian system, has very conclusively proved their igneous character, and that they are true intrusive rocks in the limestone and gneiss of the Grenville series, and of later date than these sediments. The establishment of this point in the structure of these old portions of the Laurentian of Canada, has had a marked bearing on the solving of other questions relating to the divisions of the Laurentian proper and to the overlying rocks of the Hastings and Grenville series.

In 1878, Dr. Hunt, in summing up the list of systems and formations in Canada or eastern North America, proposed the following scheme of nomenclature:

Laurentian ;—Comprising a lower division, the Ottawa gneiss, and an upper division, the Grenville series, between which is a supposed want of conformity, the two constituting the lower Laurentian of Logan.

Norian ;—The Labradorian or upper Laurentian of Logan.

Huronian ;—The Green Mountain series or altered Quebec Group of Logan.

Montalban ;—The White Mountain or mica schist series.

Taconian ;—The lower Taconian of Emmons or the Hastings series.

Keweenian ;—The Copper-bearing series of Lake Superior.

Cambrian ;—Among other things including the Quebec Group of Logan.

Siluro-Cambrian.

Of the names here indicated it may be remarked that the Montalban and Taconian have never been definitely or generally recognized in discussions on Canadian geological problems, while several of them apparently relate to groups of rocks in the Huronian system which are practically on the same horizon.

In 1881 an important scheme of nomenclature was presented by Dr. Selwyn, the late director of the Geological Survey, for use as a guide in the colouring of the maps issued by that department. In this scheme the upper member of the Palæozoic formations was styled Permian or upper Carboniferous, and a series extending from this to the base of the Oriskany or lower member of the Devonian, was styled upper Palæozoic. The lower Palæozoic began with the Lower Helderberg, or upper member of the Silurian series, and extended downwards to the top of the Huronian. This portion included, as sub-divisions, the Silurian, Cambro-Silurian and the Cambrian, the latter of which was supposed to include all beneath the Chazy formation.

In this scheme the Cambrian was made to comprise, as its upper member apparently, the Sillery and Lévis divisions of the Quebec group, and the upper and lower Calciferous, supposed to represent the middle portion of the system, while the upper and lower Potsdam, the latter including the rocks of the St. John group or Acadian of New Brunswick, were held to pertain to the lowest part, or to represent the lowest Cambrian.

Since the date of this scheme the formations in the Ottawa and St. Lawrence basins have been studied very carefully and the views then expressed have as a result been largely modified. Thus it was found that, in this area mentioned, the several formations from the top of the

Medina to the base of the Potsdam sandstone presented an unbroken sequence, both on grounds of stratigraphy and from the contained fossils, so that the divisions laid down in 1881 could not be maintained in the field. As a consequence, the Calciferous and Potsdam sandstone, the latter being now regarded as the basal portion of the former, have been transferred to the lower portion of the Cambro-Silurian system, which has also received the name Ordovician, adopted from the British Survey, while the Lévis and a part of the Sillery, which were held to represent the Calciferous and Potsdam were also similarly or in part removed from their supposed position in the Cambrian. The term Potsdam, for the portion of the Cambrian below the Potsdam sandstone, was superseded by the use, in part, of the term St. John group or Primordial, and also by the employment of the term Georgia series for the lowest beds of that system as developed in Quebec, east of the St. Lawrence River, in which latter is probably to be included a portion of the lower Sillery formation ; while the reddish slates of that formation, formerly known as the Lauzon, may presumably be considered as the downward extension of the Lévis beds, and in consequence may be regarded as the equivalent of the Potsdam sandstone.

The middle divisions of the Palæozoic in this scheme retained the same names as given in the original nomenclature of Logan as stated in the Geology of Canada, 1863; but the lowest divisions of the scale, comprising the rocks of the Huronian and Laurentian systems were materially changed. Each of these was divided into three portions, a lower, middle and upper. In this arrangement of the Laurentian, it will be seen therefore, that Dr. Selwyn receded somewhat from the position he assumed in his official paper of 1877-78, when he proposed to limit the Laurentian to the lowest series of granite-gneiss, though no reason is given in the accompanying text for this change of opinion.

Within the last fifteen years, the study of these oldest rocks of the continent has been undertaken with renewed vigour and with a fixed determination to arrive at a true understanding of the structure and relations of the several rock formations, which have, under various names, hitherto been included under the comprehensive term Laurentian. The work in this direction has been greatly facilitated by the recent opening up of many areas by means of railways, which were previously accessible with great difficulty; so that the structure of many portions, where important problems exist, can now be readily studied in detail. In addition, the microscope has been largely employed in determining the composition and origin of many of the larger rock masses which are included in this great series of crystalline rocks. These investigations in the laboratory have been supplemented by a careful investigation in the

field, which has extended over a very large area, and by a comparison of points of structure at widely separated places. As a consequence, the many widely differing conclusions which have been put forward for nearly half a century, have, in many cases, been reconciled, or have given place to others, based on the more modern methods of investigation. Thus instead of the somewhat broad generalizations, which were, to a large extent, founded on scattered and often insufficient data, in the earlier work of the staff of the Geological Survey, it has been found possible, by combining the information already thus obtained, with a more careful attention to details of structure, to arrive at conclusions which appear to be much more reasonable and satisfactory to the workers in this field than could possibly be reached, not many years ago.

The old view which held that the lowest gneiss and granites were Primitive or Primary, considering these as the first rocks which appeared after the consolidation of the earth's crust, was doubtless correct in so far as it went, and sufficed for the time being, while other great questions of structure were under consideration. Subsequently as the study of these rocks progressed, new aspects of the question were presented, and modifications of the original theory became necessary. While therefore the old name Laurentian and Huronian will probably always be continued in the nomenclature of our oldest known rocks, the areas assignable to each of these will doubtless undergo considerable modification as our investigations in this direction continue. As, moreover, the determination of these points of structure are in many cases intimately connected with great questions of economic importance, the acquisition of knowledge as regards the true relations of the several members of the series is greatly to be desired.

In this connection, among the most important questions which now present themselves, is the determination of the portion which may be strictly regarded as representing the Fundamental rocks of the whole series. In this category has been placed for many years a great assemblage of strata, some of which without doubt are referable to the oldest formed granite-gneiss formation, while other portions of these should undoubtedly have been assigned to a higher position in the geological scale. To some extent this was done long since, by the use of the term Huronian, and by the transference thereto of certain portions which presented features indicating that they were of a different origin from the basal gneiss; but there still remain other large areas, whose exact horizons must still to some extent be regarded as not yet quite definitely fixed, and these will doubtless, for some time, continue to afford material for discussion.

The multiplication of names for rock groups, where the horizons are not determined, and where, as in certain districts, their relations are

obscure, has always been considered admissible, but does not quite satisfy the conditions of the problem, regarding the true positions of the different members which make up the whole series. Such names as Couchiching, Keewatin, Steep Rock series, Vermilion, etc., employed in the study of the area west of Lake Superior, have been there well employed to distinguish certain groups of rocks, the structure and relations of which have been observed in different localities; but until a correct idea can be had as to the true position of each of these, and of their relations to each other and to the great underlying mass upon which they now rest, as well as to the somewhat similar rocks in eastern Canada, these additions to our nomenclature cannot be regarded as greatly enlarging our knowledge concerning the systematic structure of the whole. So also the new term Algonkian, employed by some of the geologists of the United States, for certain portions of this great group of crystalline rocks, and which has not, hitherto, been readily accepted by Canadian workers, does not afford much information as to the proper or satisfactory settlement of this great question; while Azoic, Eozoic and Archæan, terms which have also been applied from time to time, for the whole or for portions of the crystalline rocks, can now be accepted as applicable, only in the broader sense, to the rocks of the series as a whole.

That there was a first formed crust of the earth, on which all subsequent rock formations have been deposited, is conceded by all. Such original crust, wherever it may be found, may well be accepted as representing our oldest rock series; and in our present scheme of nomenclature, may be safely assigned to the Laurentian division. This old crust, presumably greatly modified from its original condition as a consolidated mass, has been recognized over large areas, and in many widely separated districts, throughout the northern portion of the Dominion. In this we may reasonably include our first formed granites and syenites, which from some cause have, since their formation, frequently assumed a foliated structure to which the name gneiss has been applied; and in these no trace of sedimentation or stratification has yet been discerned. Upon this view our scheme for this portion, would coincide closely with that laid down in 1877-78, by Dr. Selwyn.

Upon this there has been deposited, largely through the agency of water, a great series of formations, comprising gneiss, schist, quartzite, limestone and conglomerate, which must evidently be assigned to a higher position in the scheme. These must have been largely derived from the decay and waste of the pre-existing crust; but they have in turn been invaded by great masses of granites and other kinds of igneous rocks, which have helped to swell their original volume greatly, and the

difficulty at present appears to be the assigning of certain portions of these apparently newer masses to their proper horizon. Thus if we assume that these intrusive and igneous rocks were originally portions of the first formed crust, which have penetrated through the overlying gneissic portions, two views may be adopted, viz., either these may also be called Laurentian, regarding them as the equivalents in origin with the rocks of the oldest crust, from which they have been extruded, or they may be regarded as newer than the rocks which they penetrate, their classification being based on the time of their intrusion.

In the case of certain intrusive or igneous rocks, which are now found in association with the portion styled Grenville and Hastings series, some of these are undoubtedly assignable to a newer position, as has been done in the case of the anorthosites and some kindred rocks, and these have, within the last few years, been entirely separated from the rocks of the so-called Laurentian system, since they cut the limestones and gneiss of that series. Illustrations of this feature of intrusion may be observed in the mass of syenite and granite of Grenville. These rocks must, however, have had their origin from some portion of the original magma beneath the upper gneiss which they penetrate, and as such would seem to represent a portion of the Laurentian proper. In the eastern part of Quebec, as also in Nova Scotia and in New Brunswick, there are large areas of similar looking granite which penetrate rocks of pre-Cambrian, Cambrian, and other formations as high as the lower part of the Devonian. These have doubtless been exposed by denudation of the sedimentary beds of these districts, and they presumably had their origin in the same manner as those which cut the crystalline rocks of Grenville. They have not, however, in general been regarded as Laurentian but as newer intrusives; and their age has usually been considered to be that of the newest rocks which they penetrate.

In the study of the Ottawa district, it is found, that as we go northward from the Ottawa River towards the height of land, the overlying series of gneiss and limestone becomes greatly reduced in volume, and at last apparently disappears entirely in many places, while the country in this direction becomes occupied largely by the lowest or Fundamental gneiss and granite. In this case also there can be no apparent reason why these old rocks may not with propriety be placed in the Laurentian. In the area nearer the Ottawa, and in that portion of Ontario to the south, portions of this oldest gneiss appear at intervals from beneath the newer series of crystallines, and these would seem to be exposed by the denudation of the latter. Over long distances all these rocks are now thrown into a succession of folds with occasional overturns, in which the anticlines run in a generally north and south direction. The anticlines

throughout all this area are often in the underlying granite-gneiss, while the synclines are occupied by the rocks of the newer gneiss, limestone and quartzite series. Since the folding of these rocks has practically been along uniform lines, there is often no apparent stratigraphical unconformity between the rocks of the two series, as the synclines of the newer follow regularly along the anticlines of the older. This gradual disappearance of the upper series northward may be, to some extent, due also to the gradual elevation of the surface, which at the height of land in this direction is about 1,000 to 1,200 feet above the sea.

South of the Ottawa, the depth of the great basin of newer crystalline rocks increases, so that, in that portion more nearly approaching the overlying sedimentary formations of Ontario, north of the great lakes Ontario and Erie, these appear under somewhat different conditions. In this direction the problem is somewhat complicated by the presence of masses of granite-gneiss and also of granite, the action of which upon the associated members of the overlying series is very manifest, sometimes in the distortion of the beds, which are frequently cut off entirely along their line of strike, while in other portions these are pushed aside as by the intrusion of some great mass of igneous rock. The question therefore arises whether these granite and granite-gneiss masses shall be assigned to and classed with, the Fundamental or Laurentian gneiss, or shall be regarded as intrusive masses which shall date in age from the time point of the rocks which they penetrate, as in the case of the so-called Devonian granites of the east.

If we assume the time limit merely as the basis of our classification, it would appear that all the later rock masses which have invaded or distorted the stratification of the upper gneiss and limestone, should be separated from the Laurentian proper and assigned to the same position as the Grenville granites and the anorthosites, otherwise we have the apparently startling anomaly of a formation, regarded by all geologists as the oldest in the time scale, assuming a place which makes it more recent than the rocks of the overlying series. This, at first glance, appears to be opposed to all recognized principles of nomenclature, since it would practically make the Huronian older than some portions at least of the Laurentian.

Early in his study of the geology of the Lake of the Woods district, Lawson found himself confronted with this aspect of the question. In this area the relations of the so-called Laurentian granite-gneiss to the series of newer gneiss and schist, which he, for that region, designated by the terms Couchiching and Keewatin, appear to closely resemble the relations found to exist in the deeper portions of the crystalline basin of Quebec, near the lower Ottawa, and in eastern Ontario. After a close

study of the problem in the west Lawson arrived at what he regarded as a satisfactory solution of the difficulty.

In a report on the geology of the Rainy Lake region, published by the Geological Survey in 1887-88, as also in a paper read before the International Congress of Geologists, held in London in 1888, Lawson describes very fully the difficulties which are presented in the study of the Archæan rocks in that district, in the attempt to follow the lines laid down for their interpretation some years before. As the conditions which here prevail are similar to those which occur in the more eastern area, and in fact throughout the whole Archæan complex of Canada, a brief summary of the views he there puts forth, to account satisfactorily for the intricate relations found in these rocks, may be presented, since these have practically been accepted by all the Canadian workers in this interesting field.

The Archæan is held by Lawson to consist of two great sub-divisions, viz., a lower, consisting of granite and syenite, which in places, by reason of their foliation, are known as gneiss; and an upper portion, which he named the Couchiching and Keewatin series, the rocks of which are largely bedded, and are composed of mica and other schists with fine grained gray gneiss, for the former, while in the latter are also included large masses of igneous rocks.

The underlying Laurentian granite-gneiss, at some date subsequent to the deposition of the rocks of the two upper series, underwent a period of fusion. With the fusion of this floor, portions of the overlying strata have been absorbed into the general underlying magma.

The fusion was probably due to the weight of the superincumbent strata, which depressed the underlying floor till it came within the zone of fusion of all rocks, compatible with the conditions of such depths; and this fusion extended to a certain uneven surface in the Couchiching, which point forms now the line between the lower and upper Archæan. The overlying Couchiching and Keewatin rocks retained their originally bedded condition, and formed a hard and brittle crust upon the magma. While this magma was in the fused condition the crust was folded, crumpled or shattered, so that masses of the upper series became involved in the fused mass below, while portions of the fused rocks filled fissures in the overlying schist and other strata and subsequently crystallized as Laurentian gneiss. Such intruded rocks therefore, while originally portions of the Laurentian magma, may be petrographically considered as newer than the upper series which they penetrate. The rocks of the upper Archæan while occurring as bedded formations, do not appear to have been reduced to the plastic or fused condition, and such changes as now appear in these are due to true metamorphism.

As regards this question of metamorphism Lawson also remarks, "that the molten gneiss being under and around these troughs of upper Archæan rocks, and the action long continued by reason of confinement, under a superincumbent crust, the resulting metamorphism has been more intense and more general or regional than in the case of a mere local intrusion of granite through higher portions of the crust. But while the metamorphism has been regional, it has been more intense at the actual contact of the basal portion of the firm crust with the underlying magmas, than in higher portions of series of formations, and in this gradation of results we have distinct analogy with local or contact metamorphism so-called. The conception of the igneous origin of the lower Archæan or Laurentian and the metamorphic character of the upper Archæan, thus explains why the basal beds of the Keewatin, where these rest on the Couchiching, should not be similar to those same beds when resting on the Laurentian, and why in the latter case these beds should appear much more altered than in the former."

In the report of Mr. W. H. C. Smith, on the rocks of the adjacent area, the same association of strata is pointed out. The intrusion of portions of the underlying Laurentian granite-gneiss is noted in the rocks of the Couchiching and Keewatin series, and the alterations of the latter along the lines of contact is mentioned. Mr. Smith also suggested the correlation of the Couchiching with the Grenville series of Quebec, which it greatly resembles, with the exception that, in the western area, the crystalline limestone portion of the latter is apparently absent. It would therefore appear that in the relations of the Laurentian granite-gneiss to the overlying sedimentary gneiss and schist series two phases are to be recognized, viz., that seen in the northern portion of the Ottawa basin, where the Laurentian gneiss underlies apparently the Grenville series in regularly arranged anticlines, the stratigraphical sequence being well established; and the arrangement observed in the southern and western areas, where the contacts are more of the nature of invasions of the lower gneiss when in a plastic condition, into the gneiss and limestone of the upper series. It is of course supposable that the difference visible in the relations of the two areas mentioned may be due to agencies of denudation, by which the whole or great portions of the overlying upper series have been removed, subsequent to the changes which have been pointed out. Such denudation must have been enormous in the lapse of time which existed from the laying down of the first Laurentian floor to the deposition of the Potsdam sandstone, which is the formation which succeeds the Grenville series in Quebec and eastern Ontario, and it is possible that the great and immense thickness of Cambrian rocks which

elsewhere intervene, has never been deposited in this area, since the basal beds of the Potsdam are composed largely of the débris of the Grenville and Hastings rocks.

Comparing the Grenville and Hastings series of the east with those styled Couchiching and Keewatin in the west, it may be said that while the former resembles most closely the Grenville rocks, the Keewatin presents certain features more generally found in the rocks of the Hastings series. As for the relations of the Hastings and Grenville series themselves, it is now considered by those most recently engaged in working out this problem, that the latter represents some portion of the Hastings, in a generally more highly metamorphic condition, while the latter from its position nearer the centre of the basin, has apparently a greater thickness of strata, some of which do not appear in the portion found in the more immediate vicinity of the Ottawa River.

Following the studies of Lawson in the west, the detailed study and mapping of the several divisions of the crystallines of the Ottawa district and the area further to the west, where the original investigations on the rocks of the Hastings series were commenced nearly forty years ago, were soon undertaken by several workers, principally by Messrs. Barlow and Adams in Hastings and Haliburton, and by the author in the area east of the Ottawa and in Renfrew county, west of the river. The observations which have been carried out systematically over a very large area for some years have now reached a point when satisfactory conclusions can be arrived at. In the area west of the Ottawa the conditions, as already intimated, appear to very closely resemble those described by Lawson for the country west of Lake Superior. There is always the association of upper gneiss and schists described in the Couchiching, with areas, often of large extent, of what appear to be the underlying Laurentian granite-gneiss, but in the eastern district there is also a very large development of crystalline limestone, quartzites and sometimes slaty rocks, which are a part of the upper series. In many of these places the granite has cut through the limestone and other members, precisely as has the anorthosites of the Ottawa and St. Jerome district. In other cases the limestone and associated gneiss appear to have been thrust aside and the disappearance of certain members is probably due to unequal denudation and sometimes to squeezing.

In order to explain this feature of the association of the two series of upper and lower gneiss, a theory was put forward by Barlow and Adams, in a paper read before the Geological Society of America in 1897. In this, the view was taken strongly corroborative of that advanced by Lawson. The rocks of the Grenville and Hastings series

were regarded as largely of sedimentary origin and of later date than the Fundamental gneiss. The former has sunk down into and been invaded by the intrusions of the latter while this was in a semi-molten or plastic condition. The limestones, while themselves rendered more or less plastic by the same heat which softened the lower gneiss, do not seem to show any distinct evidence of absorption or solution by the invading rocks, unless some of the highly garnetiferous gneisses usually associated with the limestones are formed by a commingling of the two rocks. Masses of the highly crystalline limestone or marble, in some cases lie quite isolated in what are to all appearances, the lower gneisses, as if they had been separated from the parent mass and had passed outward or downward into the gneissic magma. The contact of the Fundamental gneiss and the Grenville series would, therefore, appear to be a contact of intrusion, at least in very many cases.

It would appear, therefore, that as the result of the most recent investigations on these oldest rocks, we may base our scheme of classification or nomenclature on the oldest granite-gneiss, which may be styled Laurentian. The second member of the scale, or the Huronian, may be made to include, as its lowest portion, that part of the crystalline series, once regarded also as part of the Laurentian system, and known locally under the names Grenville and Hastings series, the relations of which to the Laurentian proper are apparently of two kinds, either a stratigraphical sequence, with a probable unconformity, owing to their difference in origin; or a contact of intrusion; and that portions of these two series correspond, while the latter is carried upward through less altered sediments to the upper members of the Huronian system.

In the Lake Superior region this is succeeded upward by the rocks of the Cambrian, represented by the Upper Copper-bearing series, or the Animikie and Nipigon groups; while in eastern Ontario this portion of the scale is apparently entirely lacking, the formation succeeding the crystalline series being the Potsdam sandstone which is now held to represent the lowest number of the Cambro-Silurian or Ordovician system.

In Quebec, however, the lowest Cambrian is represented by the Georgia series in the southern part of the province, while the different members of the Sillery presumably represent the middle and possibly the upper part of this system, in other portions of the province.

As for the Cambro-Silurian, the scale of formation may be regarded as fairly complete from the bottom to the top, the upper members appearing in the portion of Ontario, north of Lakes Erie and Ontario in the Ottawa basin.

The scale of formations is also fairly complete, both for the Silurian and Devonian in Ontario and Quebec, while in the latter province the Carboniferous is represented only by the Bonaventure formation which may be held to represent the upper portion of the Lower Carboniferous.

The scheme of nomenclature for the Carboniferous and Devonian is completed in the provinces of Nova Scotia and New Brunswick, where the highest member of the scale is reached in these provinces in the soft red sandstone of the Trias, which is, however, penetrated by great masses of more recent igneous rocks, such as diabase and amygdaloid. The newest member of the scale, to which, however, no special designation has yet been applied, is a small area of impure limestone which rests upon the diabase of the North Mountain, near the head of the Bay of Fundy, in Nova Scotia, and which may possibly be on the same horizon with certain deposits of sandstone which occupy a similar position on the western portion of the same range. These would appear, therefore, to be more recent than the Triassic red sandstone, but their exact horizon has not yet been definitely fixed, owing to the absence of determinative organic remains in these sediments.

II.—*Studies on Cambrian Faunas, No. 3.—Upper Cambrian Fauna of Mount Stephen, British Columbia.—The Trilobites and Worms.*

By G. F. MATTHEW, D.Sc., LL.D.

(Read May 25th, 1899.)

Through the favour of Byron E. Walker, Esq., manager of the Bank of Commerce, Toronto, I have had placed in my hands for study a collection of slabs and fragments of the shale from the interesting locality on the slope of Mount Stephen, whose fauna was first studied by the late Dr. Carl Roeminger, and later by Mr. C. D. Walcott, now the Director of the United States Geological Survey, and from which a species of Phyllocarid was described by Mr. J. F. Whiteaves, palæontologist of the Canadian Geological Survey.

The fine condition of preservation in which the fossils of this locality are found, as well as their abundance, makes them available for comparison to an unusual degree, and permits the elaboration of more complete descriptions of the species than is usually possible with fossils of such antiquity. In some cases the whole body is preserved, and frequently all with the exception of the movable cheeks; even when the parts are wholly separated, they are so well displayed on the surface of the layers that their relationship to each other can often be readily seen.

One cause that contributes to this result is that a great many of the species had thin tests so that they were almost completely flattened on the layers when the pressure of a superincumbent mass of mud came to rest upon them. But this cause had its disadvantages as regards the aspect of the fossils, when the layers are split open for examination; for not only does the imprint of one fossil on another obscure the characters of the latter, but *the features that characterize the interior surface of the test become imprinted on the exterior.* Thus a marginal fold that was not prominent becomes so in the fossil by pressure, and an eye-lobe that rose gradually from the level of the cheek now appears to rise abruptly and be narrow as compared with its actual breadth in life. Very often too pronounced furrows appear on the glabella which are really due to raised ridges on the interior of the test. In all such cases the fossils are described *as they now actually appear.*

The Mount Stephen shale is of a gray, to dark gray colour, and weathers of a pale gray, or brownish-gray tint. It is somewhat calcareous and films of calcite found between the laminæ of the rock, sometimes obscure the fossils. Occasional threads or films of pyrites are found. The chiten of the tests is sometimes entirely removed; and at other times

it remains, so that when the rock is weathered the fossil stands out as a black object on a light gray ground, making rather a striking display.

The tubes of some of the sea-worms, owing to their heavy chiten, are intensely black, and others that are thinner, are only faintly preserved. Similar variations are seen in the condition of the Brachiopodous remains, those that were calcareous are but poorly shown, but the kinds that have best resisted the tooth of time are species with chitinous and phosphatic shells.

Faintest of all the more highly organized fossils is the Phyllocarid, Anomalocaris, described by Mr. Whiteaves; it is only recognizable by a somewhat shining film, illuminating faintly the slaty layers.

ANNELIDA.[1]

UROTHECA,[2] n. gen.

Among the few recognizable organisms of the gray shales beneath the upper limestone bed of the Etcheminian at Smith Sound, are some slender tapering flattened tubes which in form are like a slender Orthotheca, but are of chitinous substance. Similar forms are found in the shales of the Upper Cambrian beds at Mount Stephen, in British Columbia, in which the chitinous substance is firmer, but in other respects the forms closely resemble each other. I cannot find that these forms have been anywhere described, and they are therefore noticed here under the above generic title.

Attenuated chitinous tubes, beginning in a thread-like, cylindrical distal end, and at one-third or half its course increasing somewhat rapidly to a slowly enlarging cylindrical tube, marked by transverse growth-lines, or smooth; opening transverse, no projecting lip; tube often somewhat curved or sinuous.

One might suppose that Torellella was synonymous with this genus, but it is founded on a phosphatic shell, while this appears to be simply chitinous. The best preserved species, that from Mount Stephen, in the enlarged part of the tube, shows a structure similar to that of Orthotheca and Hyolithes, in that the lower portion of this enlarged part is more rigid than the distal portion. The long slender proximal end in which the tube begins is peculiar.

Urotheca flagellum, n. sp. (Pl. I., fig. 2.)

Slender, gently curved chitinous tubes. Proximal half of the tube slender, sinuous and very thin; distal half divided into two portions, of

[1] The reasons for referring the succeeding genera to the Worms are given in the article following this one, on the Etcheminian Fauna of Smith Sound.

[2] Oura-theke.

which the lower is rigid, especially in the median part of the ventral side; upper fifth of the tube thinner and more flexible.

Sculpture.—The surface of the tube is marked by low, rounded ridges of growth, which are directly transverse; in the distal half there are about three of these ridges in the space of a millimetre; often the tube appears smooth without, when the annulations are faintly marked on the mould of the interior; occasional more distinct annulations are found at intervals along the tube.

Size.—Width of the orifice, 3 mm.; the tube can be traced at the proximal end down to a diameter of $\frac{1}{4}$ mm.

Horizon and *Locality.*—Upper Cambrian shales of Mount Stephen, B. C. Infrequent.

The chiten of the test in this species is peculiarly dense and firm, and blacker than that of the trilobites with which it is associated; in this respect it reminds one of the graptolites of the Quebec group as seen at Point Levis. It is evidently not a phosphatic shell, as it does not weather to the bluish (lavender blue) colour found in Lingulellæ and other Brachiopods in which this salt (calcium phosphate) abounds.

UROTHECA PARVA, n. sp. (Pl. VII., fig. 2.)

Small, narrow, cylindrical tube; the larval portion thread-like, and showing several diaphragms at the upper end where it changes into an enlarged, thin, chitinous tube; this is conical for one-quarter of its length, and then becomes cylindrical.

Sculpture.—Marked by exceedingly fine longitudinal and transverse lines, giving a minutely cancellated surface.

Size.—Length of the larval part of the tube, about 4 mm.; length of enlarged part, 10 mm.

BYRONIA, n. gen.

Among the rarer objects in the Mount Stephen shales are a few examples of a tube worm of much larger size than Urotheca and which is sufficiently distinct to form a new genus. This form also dwelt in a horny tube, but thinner proportionately than that of the genus named, the surface was marked by sharply raised annulations after the manner of some Tentaculites, from which it differed in having a sinuous, not straight and rigid tube as in that genus. The proximal end (so far as known) is a curved tube, one mm. in diameter, whence it gradually enlarges to the orifice.

It gives me much pleasure to couple with this genus the name of Byron E. Walker, Esq., of Toronto, to whom I am indebted for the opportunity of examining the fossils of Mount Stephen.

Byronia annulata, n. sp. (Pl. I., fig. 2.)

A long flexuous chitinous tube, (sharply ?) curved at the proximal end and terminating in a transverse circular aperture. It is marked by sharply raised transverse annulations, that are more distantly placed in the distal than the proximal part. In the larval part of the tube there are about six to a millimetre; at one-third of the length of the tube from the proximal end they are twice as far apart; at two-thirds from this end, and from this to the orifice, there are about two annulations to a millimetre.

Sculpture.—The surface of the tube is minutely granulated, and is marked between the annulations by closely set longitudinal raised lines, visible only with a lens. The interior of the tube is smooth, but has furrows corresponding to the annuli and the longitudinal raised lines. The sculpturing is more distinct on the interior than on the exterior of the shell.

Size.—Length of the most complete example (which, however, does not show the orifice of the shell), 75 mm. Width, where the tube terminates, 10 mm.

This species is marked on its surface like some examples of Tentaculites, Schloth. but that genus has a calcareous shell and is straight, and the species also are mostly much smaller. Trachyderma, Phill., said to resemble Serpulites, might be like this, but the tubes are said to be membranaceous.

ORTHOTHECA, Novak.

Orthotheca corrugata, n. sp. (Pl. I., fig. 3.)

This slender species is easily recognized by the strong longitudinal ridges that traverse it; there are about three of them on the ventral side. It occurs rarely.

HYOLITHES, Eichwald.

Two species of this genus are present in the Mount Stephen Fauna.

A species that seems similar to *H. pennatulus*, Holm, but is about a half larger, is not uncommon. Being flattened in shale we cannot be sure of its identity, but like that species it has a strong rib along the centre of the ventral side, with a weaker ridge dividing the area on each side near the middle.

Hyolithes carinatus, n. sp. (Pl. I., figs. 5*a* and *b*.)

The tube enlarges somewhat rapidly and has a moderately arched lip on the dorsal side. The ventral side has a rather strong keel along

the middle, and one or more faint longitudinal ridges along the two halves of this side. Apical angle about 20°.

Operculum sub-oval transversely, somewhat angulated on the ventral side, and broadly rounded on the dorsal side, the nucleus is close to the ventral side, and there are two strong furrows spreading V-like on each side of it and deepening toward the projecting lateral edges, the nucleus and dorsal side are much elevated, and the ventral slopes behind the furrows bent up.

Sculpture.—Both sides of the tube show a granulated surface, interrupted at intervals by beaded growth-lines. The operculum also has lines of growth showing on its surface, especially toward the edges.

Size.—Length to the apex, about 24 mm. Width, about 8 mm. Operculum, 6 × 7 mm.

This species may be compared with *H. pennatulus*, Holm, of the Peltura Fauna of Sweden, which also has one strong rib and two weak ones on the ventral side.[1] It differs from *H. americanus*, Bill., in the form of its operculum, and, therefore, in the shape of the tube. It is a larger species than *H. Billingsi*.

HYOLITHES, sp. (Pl. I., fig. 4.)

This is a smaller species with very thin test, camerated toward the apex. It changes its angle of aperture from 30° in the camerated part, to 14° in the outer part of the tube.

Sculpture.—On this smooth thin tube, no markings were detected.

Size.—Length of the part known, 15 mm. Width of aperture, 5 mm.

AGNOSTUS, Brongniart.

AGNOSTUS MONTIS. (Pl. I., fig. 6.)

Agnostus, cf. *integer*. Barr., Roeminger, Proc. Acad. Sci., Philad'a, pt. i., 1887, p. 18, pl. 1, fig. 9.

The species indicated by the above name occurs somewhat sparingly in the Mount Stephen shales. It is evidently a Limbatus of the general form of the earlier types of this group, but differs from most of them in the absence of lateral spines to the pygidium, and the rounded form of this shield. Except for the more cylindrical rachis of the pygidium, this species would be very near to *A. Acadicus*, Hartt. In some examples the pygidium is wider in front, and the rachis also wider than represented in the figure.

I have no doubt that Roeminger described this species in his essay, only he reversed the fossil and described the head for the tail ; correcting the description in this respect it would read as follows :—

"The glabella, or central convex protuberance of the head-shield, is equilateral and not conical ; the anterior end of it is abruptly rounded

[1] Swedish Cambrian—Silurian Hyolithidæ, etc., p. 105, pl. 5, figs. 1 to 6.

off; a deep furrow runs across the glabella on the anterior third of it; its larger posterior portion bears a short spinose projection.

"The two thoracic annuli are divided by furrows and constrictions into nodular partitions, representing rachis and ribs, but of too small size to be accurately represented by a description, or by figures.

"The pygidium differs from the head-shield by the conical shape of its rachis, terminating near the posterior margin in a bluntly pointed end; the median line of this rachis rises near the anterior end into a rod-like crest, terminating in a backward projecting spinose protuberance; the anterior part of the rachis exhibit also an indentation by lateral furrows."

Mr. Walcott has identified this species with *A. interstrictus*, White,[1] but a comparison of the description and figure of this species with *A. montis* will show a marked difference, especially in the form of the glabella and the size of the rachis of the pygidium.

Among the Agnosti of the Prospect Mountain limestone described by Mr. Walcott,[2] the one most like this species is *Agnostus bidens*, whose "cephalic shield" (a pygidium) is like the tail shield of this species in form; it differs however in having a narrower rachis, and in having that divided in two lobes by a pair of transverse furrows.

The Mount Stephen Agnostus differs from *A. Sidenbladhi*, an Upper Cambrian species of Sweden, in the larger and longer rachis to the tail-shield. It differs from *A. fallax* in the absence of lateral spines to the pygidium. This species as figured by Linnarsson had no tubercle on the main lobe of the glabella, nor defined front lobe to the rachis of the pygidium. Later authors introduce these features.

PTYCHOPARIA, Hawle and Corda.

Pychoparia cordilleræ, Roem., sp. (Pl. I., fig. 7.)

Conocephalites cordilleræ, Roem., Acad. Nat. Sci., Phil., Proc. 1887, pt. i., p. 17, pl. i., fig. 8.

Ptychoparia cordilleræ, Walc., Am. Jour. Sci., vol. xxxvi., Sept., 1888.

Among the trilobites of the fauna of Mount Stephen, this is the only one which has a specially Lower Cambrian aspect. As will be seen by the authorities above cited it has been referred to more than one genus, and might with as much propriety be relegated to a third.

Dr. Roeminger's figure does not well represent this species, which is proportionately longer than his figure, and has eye-lobes more distant from the glabella.

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[1] U. S. Geol. Surv. Bull. 30, p. 149, pl. xvi., figs. 6 and 6a.

[2] U. S. Geol. Surv. "Palæontology of the Eureka District," p. 26, pl. ix., figs. 13 and 13a.

The furrows on the surface of the glabella, except the posterior pair, are shallow undulations, and there are three pairs. The occipital ring bears a small tubercle.

The movable cheek was not known to the author of the species; this part is wide and strongly arched on the external margin. Exclusive of the spine it is somewhat more than twice as long as wide, and has a shallow furrow within the narrow marginal rim. The spine is short, reaching across the first two pleuræ only; it is weak and often detached.

The eye-lobe is short, being half as long as the suture in front of it and one third of that behind it. With the movable cheek in place the head is more than twice wider than long.

There appears to be some variation in the number of joints in the thorax; Dr. Roeminger enumerates from fourteen to seventeen, but the lower numbers were probably found in mutilated individuals, Mr. Walcott found nineteen in an example 23 mm. long; the author has found eighteen as a constant number in examples of a length of 16 mm. upward to the adult size. There is a row of low tubercles along the median line of the thorax.

The pygidium is very compact; the rachis is large in proportion to the side lobes and extends nearly to the posterior margin; three somites are indicated by shallow furrows, and the side lobes have two pairs of furrows, of which the posterior is very faint.

Sculpture.—The surface is minutely granulated, and on the cheeks has faint sinuous lines radiating from the eye-lobe, ocular fillet and front of the glabella to the anterior and lateral margins of the head-shield; these lines are most distinct on the interior surface of the test.

Size.—About 25 mm. seems to be the limit of length of the body of this species.

It is difficult to choose between Ptychoparia and Solenopleura as the genus for this species.[1] To the former it is related by its rather shallow cephalic furrows and its genal spines; to the latter by its pleuræ with rounded ends, its short compact pygidium and its granulated surface.

This species is closely like *P. Kingi* in form, but has a wider head-shield and narrower pleuræ; in that species, according to Mr. Walcott's figure, nine segments of the thorax are equal in length to the cephalic shield, in this ten joints equal the length of the cephalon.

P. Adamsi may be distinguished from this species by its wider fixed cheek, and more direct dorsal suture.

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[1] Roy. Soc. Can. Trans., vol. v., p. 134.

CONOCEPHALITES, Barrande.

CONOCEPHALITES (CONASPIS ?) cf. PERSEUS, Hall. (Pl. II., fig. 4.)

cf. *Conocephalites* (*Conaspis*) *perseus*, Hall, Preliminary notice of the Fauna of the Potsdam Sandstone, Albany, 1862.

In a small head that occurs in these shales, we seem to have an example of the genus Conocephalites (sens. strict); that is, species which, with a long conical glabella, have narrow fixed cheeks and a long eye-lobe. Trilobites of this type were found by Barrande in the Fauna of Hof. (*C. Wirthi* and *C. Bavaricus*), by Hall in that of the Potsdam Sandstone of Wisconsin (*C. perseus*, *C. Iowensis*, *C. anatinus*) and by Brögger in Norway, *C. ornatus*.

The present example may be that of an immature individual, but as it introduces a new type into this fauna, it is worth describing.

Only the middle piece of the head-shield is known. This is subquadrate, but with the posterior angles much extended.

The anterior marginal fold is narrow and the lateral angles are truncated as in Conaspis, Hall, the area in front of the glabella is about twice as wide as the fold, and the dividing furrow is sharply impressed. The glabella is elongate-conical—about a third longer than wide, impressed by three pairs of furrows, the posterior quite oblique and almost meeting the occipital furrow; the second pair, also oblique, but shorter, the third pair quite short and close behind the inner end of the ocular fillet. The occipital ring is three times longer than wide, separated from the glabella by a distinct furrow, sharply impressed in the outer third.

The fixed cheek opposite the eye-lobes is narrow, scarcely wider than half of the width of the glabella at the back, but at the posterior lateral angles it is more than the width of the glabella; the eye-lobe is as long as the width of the glabella in front, with which it is connected by a strong ocular fillet; the dorsal furrows are deep and meet in front of the glabella. The dorsal suture goes nearly directly forward in front of the eyes, but behind the eyes, curves sharply outward. The posterior marginal furrow is narrow, and is geniculated at the middle.

Sculpture.—The surface of the test is minutely granulated, and obscure ridges radiate from the front of the glabella and ocular fillet toward the anterior margin of the shield.

Size.—Length of the head, 5 mm. Width of the middle piece, in front, 4 mm.; behind, 7½ mm.

A species not very different from this in form of the middle piece of the head, is the *Conocephalites* (*Conaspis*) *perseus*, of Hall, found in the Potsdam Sandstone of Wisconsin. It has a narrower and more pointed front, broader glabella and less oblique furrows on the glabella, as well as

a shorter eye-lobe. Such differences might exist between the larval and adult shield of the same species.

Conocephalites (sens. strict.) is a type of the Upper Cambrian, though one species, *C. ornatus*, Brögger, is known from the Paradoxides Beds.

CORYNEXOCHUS, Angelin, 1854.

In his Palæontologia Scandinavica, Angelin described a genus of small trilobites upon the basis of two species, one Cambrian and the other Ordovician. As the second is represented only by a pygidium and referred doubtfully to the genus it may be disregarded. Taking the Cambrian species only, we find that in this the pygidium is referred to the head-shield with an interrogation mark. Corynexochus then is narrowed down to the head-shield of this Cambrian trilobite, and we find in it a remarkable resemblance to a species described by Roeminger from the Mount Stephen fauna. This is *Menocephalus Salteri* (Bill.) Roem.

CORYNEXOCHUS ROEMINGERI, Matt. n. sp. (Pl. II., fig. 3.)

Menocephalus Salteri, (Bill.) Roem., Proc. Acad. Nat. Sci., Philad'a., 1887, Pt. i., p. 16, Pl. i., fig. 6.

[*Karlia stephenensis*, Walc., Proc. U. S. Nat. Mus., 1888, p. 445; no figure, (referred to Roeminger's *M. Salteri*, is not this species, but probably *Dorypyge Dawsoni*. (See below.)]

On referring to Billings's figure and the description of *M. Salteri*, I agree with Mr. Walcott that the Mount Stephen species above cited is not the same, being separated both by the form of the glabella and cheeks and by the projecting anterior marginal fold. Dr. Roeminger considered the Mt. Stephen species to be closely related if not identical with this species, and gave a figure with the following description :—

"The head deprived of the movable cheeks, bears a large glabella, considerably dilating in front, with three distinct lateral furrows. The thoracic ribs are deeply excavated in the centre, and the adjoining margins of every rib project as high ridges, with a dividing line along the crest. The annuli composing the pygidium are rather obsolete, but four sharp furrows, spreading from each side of the rachis, indicate its composition of at least four anchylosed segments.

"*Size.*—The specimen [showing the whole shield except the movable cheeks] has a total length of 16 mm.; length of head 6 mm.; length of thorax with *seven segments* also 6 mm.; length of pygidium 4 mm."

I may say in reference to this description, that in the three lateral furrows of which Roeminger speaks, he appears to have included the occipital furrow, for only two glabellar furrows appear in his drawing. His example was a mould; on the outside of the test when preserved,

only the posterior furrow is traceable, and this is faint; the occipital furrow, however, is deep and broad. In the Swedish species two furrows are indicated at the margins of the glabella.

Dr. Roeminger's figure does not do justice to the size and prominence of the fixed cheeks, which are quite tumid, and give the head, when partly buried in the matrix, the appearance of a Trinucleus which has been deprived of the decorated border.

I judge from the form of the posterior marginal fold that the pleuræ are strongly geniculated; with their deep furrows as described by Dr. Roeminger, they would resemble those of Solenopleura. The rachis of the thorax is probably high and narrow.

An example of a pygidium which appears to belong to this species has one heavy furrow on the side lobe and two sharp narrow ones; the rachis is as described by Dr. Roeminger.

Sculpture.—The thick test of this little species is covered with a minute granulation.

Size.—I have found no example larger than that figured by Dr. Roeminger, though several smaller, they are recognizable by the trilobate appearance of the middle piece of the head, as described above.

This species is distinguished from the Swedish one by the less prominent, but broader front of the glabella. Judging from the form of the Canadian species I would suppose that the second curve in the margin of the sutural line of the middle piece of the head in the Swedish species represents the eye-lobe.

It is evident that Mr. Walcott is in error in his identification of this species in the Mount Stephen material sent him by Dr. Roeminger. It did not grow to anything like the size indicated by the former author, which approaches nearly the full dimensions of *Dorypyge Dawsoni*. Neither does this species have "fine irregular elevated striæ on the glabella, but *D. Dawsoni* has. The young of *D. Dawsoni* with its rigid, smooth glabella, somewhat broadened in front, might be mistaken for this species, but the glabella is always more quadrate.

Among the fossils of the Prospect Mountain limestone is one, which by its size and general contour, approaches this species. This is the *Ogygia* (?) *problematica*. The dorsal suture is said to be that of Ogygia and Asaphus, so that although the anterior extension is not shown in the figure it would be like *Corynexochus Roemingeri*. The dorsal furrows are said to be shallow, in which respect they differ from the Mount Stephen fossil. Shallow glabellar furrows are spoken of, but none such are shown in the figure.

DOLICHOMETOPUS, Angelin.

DOLICHOMETOPUS OCCIDENTALIS, n. sp. (Pl. II., fig. 2.)

Body ovate, with short genal spines and broad prominent rachis.

Head-shield narrowly semi-circular. The glabella cylindrical, somewhat narrow in the middle, about half longer than wide. Two furrows are visible at the side of the glabella, the posterior directed backward In this example the front of the glabella is not well preserved. The occipital ring is divided from the glabella by a distinct furrow and bears at the back a low spine or tubercle. The fixed cheek within the eye-lobe is about a third as wide as the glabella, but at the back is more than half as wide. The eye-lobe is long, narrow, and but slightly arched, its length is about two-thirds of the width of the glabella. The dorsal suture arches outward in front of the eye, and also more decidedly so behind the eye, the proportion of the three cords counting from the front is about $3\frac{1}{2}$, 6, 4. The posterior marginal fold is broad and the furrow wide.

The movable cheek is short and wide, and has a wide border; the area of the cheek at the front of the eye is as wide as the marginal fold, at the back it is a half wider; the cheek ends in a short obtuse spine.

The thorax is composed of eight segments, and is about one-third wider than long. The rachis is wide, wider in front than the back part of the glabella. The rachis is, one-quarter wider in front, than the length of the pleura, but at the back of about the same width, the ring is prominent, has a deep furrow in front and bears a tubercle or spine at the back. The pleura has a deep triangular furrow running along the middle nearly to the end; it is broad at the rachis, next which there is a small elevation in the middle of the furrow, and becomes narrow and fades out toward the end of the pleura, the end of which is flattened, rounded, and apparently devoid of a spine.

The pygidium is semicircular, and about twice as wide as long The rachis is large and prominent, has three somites and extends nearly to the extremity of the pygidium. The side lobes are marked by two deep grooves, which alternate with two other grooves that are deepened toward the margin; the posterior grooves have the extremities curved backward; the posterior margin is flattened and the fold is weak.

Sculpture.—The outer surface is unknown, and the inner surface. minutely punctate.

Size.—Only one example is known. This is 12 mm. long and 8 mm. wide at the genal spines. The head-shield is 5 mm. long. The thorax is 5 mm. long and 7 mm. wide. The pygidium is 2 mm. long and 4 wide.

The discovery of this species enables us to fill out more completely the diagnosis of this genus. Apparently only the middle piece of the head-piece has been known in Sweden. The author's study of Hastings

Cove, New Brunswick, Eastern Canada, enabled him two years ago to recognize the free-cheek and pygidium, and now in this little species we have the thorax as well. This species is of unusual interest, as it combines characters found in several associated genera, thus it has the pleural groove of Zacanthoides, but the dorsal suture and to some extent the glabella of Bathyuriscus; the long eye-lobe and very narrow fixed cheek recall Conocephalites, sens. strict., but in other respects it is far removed, and will be classed with Olenidæ.

If one may gather instruction from the position and length of the eye-lobe, course of the suture, form of the glabella, etc., the Acadian species is the most primitive.[1] The Swedish comes next, and this species of Mt. Stephen is the most advanced type of Dolichometopus.

BATHYURISCUS, Meek.

Bathyuriscus howelli, Walcott.

Bathyuriscus Howelli, Walc., U. S. Geol. Surv., Bull. 30, p. 216, pl. xxx., figs. 2, 2*a*.
Embolimus rotundatus, Roem., Acad. Nat. Sci., Phil., Proc., 1887, p. 16, pl. i., fig. 4.

Dr. Roeminger has figured two examples of this species, which together represent all the parts except the hypostome. The species is remarkable for the expansion of the glabella in front and the peculiar placing of the glabellar furrows. There is considerable variation in the form of the glabella and the distinctness of the several furrows upon it, but there appears to be only one species.

As Dr. Roeminger remarked, there are nine rings in the thorax and six in the pygidium, the ridges at the sides of the pleura are broad and strong, and the furrows extend well out to the ends.

The pygidium is usually without spines, but a few which appear to belong to the species have a short spine at the anterior angle.

Development of the young.—A small head of this species, 2½ mm. long, was met with, but has probably been shortened by distortion; the width at the front is 2 mm. and behind, 5½ mm. In this head the glabella is 1¾ mm. wide in front, 1¼ behind, and 2 mm. long. There is a spine on the middle of the occipital ring. The youngest well-preserved heads observed were 6 mm. long; in these the glabella has a greater proportionate width in front than in the adult; it is 4½ mm. in width in front, 2½ mm. behind, and the length is 5 mm. In the adult the proportions are 10½, 9, 13 in one, 8½, 7, 10½ in another; these two are less club-shaped than the majority of the head-shields, among which individuals may be found with a glabella proportioned 8, 4, 10½. In some of the

[1] Trans. Roy. Soc. Can., 2d ser., vol. iii., sec. iv., p. 184, pl. iii., figs. 6*a-d* and 7*a* and *b*.

6 mm. heads the dorsal suture is close to the glabella in front, as in *B. productus* from the Wasatch Mountain, and *B. Howelli* from Highland Range,[1] and they have a slender spine on the middle of the occipital ring.

In a head, somewhat older, the shape of the glabella is different. While the three sections of the body have about the same proportions as the adult (head 8 mm., thorax 9 mm., pygidium 5½ mm.,) there is a variation in the glabella toward the adult form ; in this head the glabella has a width of 5 mm. and 3½ mm, at the front and back respectively, and a length of 8 mm. There is no spine at this stage on the middle of the occipital ring, but there is one at the back of the ring, this becomes obsolete in the adult.

Fig. 6*a* of Plate xxv. in Bulletin 30 has a glabella very like this species; but Roeminger's species can only be included in *Bathyuriscus Howelli* on the supposition that the original figure and description given by Mr. Walcott was incorrect, and that the species had not six segments as therein stated, but seven. As Mr. Walcott absolutely claims Roeminger's species to be this species, I have assumed this claim to be well founded, and have placed it as Walcott indicates.

This species may be compared with *Anomocare limbatum* of the *P. Forchhammeri* zone in Sweden,[2] with which species it agrees in a general way ; if we eliminate the flattened borders of the head-shield and pygidium which is an essential character of Anomocare, the resemblance is close ; this genus bears the same relation to Anomocare that Metadoxides of the Sardinian Cambrian bears to Catadoxides (sub gen. see page 93) of the Newfoundland Cambrian; and *B. Howelli* is perhaps a later derivation from the stock that produced *A. limbatum.*

BATHYURISCUS PUPA, n. sp. (Pl. II., fig. 5.)

A dwarf species. Shape without the movable cheeks elongate elliptical. Head-shield three-quarters of the length of the thorax. Glabella nearly three-quarters of the length of the head, somewhat club-shaped in front; four furrows, the posterior turned backward, the second transverse distinct and faint, the third and fourth directed forward, the latter faint. Occipital furrow and ring distinct, the latter wider than the part of the glabella in front of it. Fixed cheek narrow, eye-lobe nearly straight. Posterior marginal furrow and fold distinct, but short.

Thorax of nine segments. Rachis broad and high, nearly half the width of the whole thorax. Pleuræ very short, half as wide as long, traversed by a broad triangular furrow, which has a small projecting shoulder near the rachis ; tips of the pleuræ turned backward and pointed.

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[1] U. S. Geol. Surv., Bull. 30, pl. xxx., figs. 1 and 2*a*.

[2] Palæont. Scandinav., p. 25, pl. xviii., fig. 2.

Pygidium about one-quarter of the length of the thorax, suboval transversely, being rounded backward at the anterior angles. Traversed by three furrows, which are curved and pointed more and more backward. A narrow border goes around the pygidium.

Sculpture.—The test is minutely granulated.

Size.—Length, 13 mm. Head-shield, length, 5 mm. Width of middle piece at front, 3 mm., at the back, 6 mm. Length of thorax, 7 mm., width scarcely 6 mm. Length of pygidium, 2 mm., width, 4 mm. Rare.

Notwithstanding the general resemblance of this species to *B. Howelli*, of which it might be thought a larval form, it appears to the writer to be an independent species. Young examples of *B. Howelli* 22 mm. long show no tendency to develop the appearance and proportions of *B. larva*. If it were an early form of *B. Howelli* we would expect to find the eye-lobe further from the glabella than in that species, but the contrary is the case. There is also a marked difference in the sculpturing of the side lobes of the pygidium; in *B. Howelli* a furrow marks the suture between the somites, in *B. pupa* this furrow is entirely wanting.

This species appears to hold the same relation to ordinary forms of Bathyuriscus that Olenelloides, Peach, does to the ordinary types of Olenellus (sens. strict.), in that it retains in maturity certain larval characters which have disappeared from the adult form in other species of the genus. These, for this species, are a long straight eye-lobe, short posterior extension of the dorsal suture, short pleurae; and pygidium of few somites.

A remarkable feature of this trilobite is that the posterior end of the eye-lobe is turned outward, this character I do not remember to have seen in any other trilobite, except Anopolinus.

NEOLENUS, n. gen.

The species which we describe under this head are not those grouped under Walcott's modification of Meek's genus Olenoides, and which he afterwards divided into Olenoides and Zacanthoides, but are different from either of these types. One of the distinctions is in the pleural furrow. In Olenoides (= Dorypyge ?) it is a straight, broad furrow going out well to the extremity of the pleura. In Zachanthoides it is also a wide furrow, but it has a heavy shoulder in the middle at its connection with the ring of the rachis. In this group (Neolinus) the furrow is narrow and oblique, a sin Paradoxides. If one will take the trouble to refer to the original description of Meek he will see that the possession of a broad open furrow is his main reason for separating Olenoides from Paradoxides. It is manifest, therefore, that trilobites having a Paradoxides-like furrow cannot be included in Olenoides (= Dorypyge ?)

The species included in the new genus are closely related to Parabolina: they differ chiefly in having a longer pygium and shorter

thorax; also the eye-lobes are placed further back, and the marginal fold is wider. They have seven joints in the thorax and six in the pygidium in the two species known. The genus appears to range across the American continent, as a pygidium of this type has been found in Newfoundland.

NEOLENUS SERRATUS, Roem. sp.

Ogygia serrata, Roem., Acad. Nat. Sci., Phil., Proc. 1887, p. 13, pl. i., fig. 2.
Olenoides Nevadensis, (Meek), Walc., Am. Jour. Sci., vol. xxxvi., Sept., 1888, p. 165.

The following is Roeminger's description of this species: "Head, thorax and pygidium of equal length. General form of the head and course of the facial sutures correspond almost completely with the previously described species [*Ogygia Klotzi*]. The glabella of this form is somewhat broader and more prominent than in the former; also the glabellar furrows are more distinctly marked; they are three in number, the hinder one is the largest, directed obliquely inward and backward, but not reaching to the centre of the glabella.

The palpebral rim and the rugosity continued from it upward across the fixed cheeks are the same as in the former species.

The movable cheeks are protracted into long slender spines, which reach as far down as the fifth thoracic rib.

Rachis broad, almost equal in diameter to the length of the corresponding ribs, deducting their spiniferous prolongations. The occipital ring terminates with a triangular monticulose prominence, overlapping the first thoracic ring, and also each one of all these annuli of the thorax and the pygidium bears a strong spine on the median line.

The thorax of this species in all the specimens examined, composed of only seven segments.

The pygidium has five annulations, with as many ribs corresponding to them. These ribs dilate considerably toward the margin, as in the former [*O. Klotzi*]; but while in that a smooth rounded rim edges the pygidium, in this form the principal ruga of each rib extends beyond the margin of the pygidium under the form of a strong acute spine, directed backward, so as to be almost parallel with the axis of the body. Five of such spines fringe each side of the pygidium; their size is gradually diminished toward the posterior end.

The hypostome in most of the specimens preserved, occupying its natural position.

One may add the following to Prof. Roeminger's description of the characters of this species. The length of the three parts of the body is somewhat shorter, going towards the tail-shield. The front of the head-shield is shorter than in *O. Klotzi* and so is the dorsal suture, the proportion of the cords of the three curves along this line are for this species 1, 1, 2, but for *O. Klotzi* $1\frac{1}{2}$, 1, $2\frac{1}{2}$.

The glabellar furrows and outline of the glabella are not well shown in Dr. Roeminger's figure. The glabella is wider at the 2nd and 3rd furrows than elsewhere. The posterior furrows are each double and consist of an inner section, posterior, and an outer one, anterior, the two being connected by a shallow depression : the two next furrows correspond in length and course to the outer part of the first furrow, but each has a small distinct pit near the edge of the glabella ; some well preserved heads show a smaller pit on the slope of the glabella in front of the ocular fillet, indicating a fourth furrow as in Paradoxides, this little pit is often obsolete.

The arrangement of the glabellar furrows and form of the glabella in this species is not unlike that of *Parabolinella limitis*, Brög., of the Ceratopyge limestone in Sweden, which species also has a slight indication of a fourth glabellar furrow [1] while the pygidium is comparable with that of *Parabolina heres*, Brög., except that this species has usually one somite less in that section of the body.[2] The latter species also has a rugulose ornamentation of the cheeks (both fixed and mobile) similar to what we find on examples of *N. serratus*. *Parabolina heres* belongs to the Peltura fauna.

The occipital ring bears a stout spine behind.

The pygidium, as Roeminger says, has five annulations, but the posterior one is of extra width, and has the spine in the middle, it therefore represents two somites ; a partly grown individual shows a furrow across the middle of this ring.

In his figure of the hypostome Dr. Roeminger does not show the posterior lobe, which is narrow and crescentic, and is indicated by a shallow furrow on each side near the back of the hypostome. The hypostome of *O. Klotzi* is very like this.

Walcott has identified this species with *Olenoides Nevadensis*, but it appears to me that the two must be different. The comparison can only be made between the thoraces of the two species, for *O. Nevadensis* has no head and only a broken pygidium. The most striking differences are these : In *O. Nevadensis* the rachis is wider than the pleura within the geniculation, in the Mount Stephen species they are equal. In the former there is a wide furrow going straight out on the pleura, in the latter there is a narrow oblique furrow. This is not well shown in Roeminger's figure, but it is clear in all the specimens I have seen. That this representation of the furrow is not an accident in the figure of *O. Nevadensis* is clear, because Meek calls special attention to it, and *makes it his chief reason* for separating Olenoides from Paradoxides. This form of furrow is that of Dorypyge as seen in *D. Dawsoni*.

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[1] Die Silurischen Etagen 2 und 3, pl. iii., fig. 2, Christiania, 1882.

[2] Om Acerocarezonen, Moberg and Möller, Stockholm, 1898, Tafl. 12, fig. 11, Tafl. 14, fig. 13.

NEOLENUS GRANULATUS, n. sp. (Pl. II, figs. 1*a* to *c*.)

This compact species is larger and proportionately wider than the preceding. The body is as wide as the head and thorax and one somite of the pygidium.

The middle piece of the head-shield is subtrapezoidal in form. The glabella is wide, its length in the adult being only a sixth greater than the width, and it extends quite to the marginal fold. It is rather flat and carries three pairs of shallow furrows, equally spaced, arching backwards, and on some examples faintly traceable across the middle of the glabella; a four furrow, just in front of the inner end of the ocular fillet, is faintly discernable. The occipital furrow is shallow, but extends all across; the occipital ring is broad and terminates behind in a short stout spine. The fixed cheek, omitting the part in front of the ocular fillet, is sub-triangular; at the eye-lobe it is nearly as wide as half of the width of the glabella, at the back it is nearly as wide as the glabella. The ocular fillet is nearly parallel to the anterior marginal fold and is evenly raised; the eye-lobe is short, not prominent, and is opposite the space between the first and second furrows of the glabella. The dorsal suture goes directly forward from the eye, and backward arches outward nearly to the genal angle, the proportion of the cords of its curves is 1, 1, $1\frac{2}{3}$.

The movable cheek, from the dorsal suture to the tip of the spine, is nearly four times as long as wide; the area at the eye-lobe is nearly twice as wide as the marginal fold. The stout genal spine is about one-quarter of the length of the cheek, and reaches across the three first segments of the thorax.

A hypostome which, from its great comparative width, it is thought may belong to this species, has the following characters: The doubleur is attached to the front and is narrowed toward the ends. The body of the hypostome is subquadrate, has two short ears at each side, and a marginal fold at the back; the anterior lobe is nearly circular, and is surrounded by a furrow. The posterior lobe is crescentic, and extends around to the posterior of the two ears at the sides.

The thorax consists of seven segments; its length is equal to that of the head-shield without the occipital ring. The rachis is broad, and each ring bears a short stout spine at the back. The pleuræ are flat and have the tips bent abruptly backward; the anterior ones are, inside the geniculation, about four-fifths of the length of the ring, the posterior ones are equal in length to the ring; the spines are about two-fifths of the length of the pleuræ. The first pleura seems to have no spine.

The pygidium exclusive of its spines is as long as six segments of the thorax, and is twice as wide as it is long. It bears five pairs of spines, directed backward, those at the back being quite short. The rachis has

five rings, of which the first bears a short spine, the next three have tubercles, and the last which is mutilate, contains two somites.

Sculpture.—The surface where visible is seen to be covered with small tubercles, arranged on the cheeks in irregular rows more or less transverse. On the area in front of the ocular ridge they are diversified with raised lines parallel to the front border.

Size.—Length of the cephalic shield 35 mm., width of the middle-piece opposite the fourth furrow 40 mm. ; at the eye-lobes 42 mm. ; at the genal angle about 60 mm. I make the following estimate of size from a half grown individual ; whole length of the test exclusive of spines 75 mm. ; width at the genal angles 60 mm ; width of thorax, exclusive of spines 45 mm. Length of head-shield 30 mm. ; of thorax 27 mm. ; of pygidium exclusive of the spines 23 mm.

This fine species is comparatively rare at Mount Stephen. It is distinguishable from *N. serratus* by the wider glabella, the lower and more even ocular ridge and by the ornamentation of the surface ; it also grows to a larger size and has shorter spines to the movable cheeks, pleuræ and pygidium.

The species has more the aspect of a Dorypyge than the preceding one, but it differs from that genus in having only five pairs of spines on the pygidium as well as in the strong angulation of the pleuræ and pygideal spines, and in having furrows on the glabella.

DORYPYGE, Dames.

Dorypyge Dawsoni, Walcott sp. (Pl. III., fig. 1.)

Bathyurus ? Roem., Acad. Nat. Sci. Phil., Proc., pt. 1, '87, p. 18, pl. i, fig. 8.
Bathyuriscus (Kootenia) dawsoni n. sp., Walc., U.S. Nat. Mus. Proc., '88, p. 446.
Karlia Stephenensis Walc. ? Proc. U. S. Nat. Mus., 1888, p. 445.

This species was very inadequately described by Dr. Roeminger. Mr. Walcott has described it more fully, but examples in the collection received from Mr. Walker show that its characters are not yet fully understood.

It is somewhat remarkable that the spines of the pygidium, which, with the characters of the head-shield, refer it to Dorypyge should not have been observed by either of the above authors, but they are slender and might be obscure in poorly preserved tests. As Mr. Walcott's description (which, however, is not accompanied by a figure) has been published in the Proceedings of the United States Natural Museum, it seems not necessary to reproduce it here. But of the glabella it may be said that it is wider in front than behind. Also that there are slender terminal spines to the four posterior pairs of pleuræ. Also that the rachis of the pygidium is separated from the posterior border by a narrow area ; also that the rachis has six rings of which the posterior has no

spine; that the lateral lobes have five anchylosed segments; that the narrow margin bears six pairs of slender spines, one for each somite.

It should be mentioned that the broad flattened ribs of the lateral lobes of the pygidium have a depression in the middle of their somewhat widened extremity.

The movable cheek has not been described. The dorsal suture cuts the anterior margin obliquely and curves in to the eye-lobe, which is short and has little prominence; behind the eye-lobe the suture turns outward nearly to the genal angle, from the back of the eye to the front of the shield the general course of the suture is nearly parallel to the side of the glabella. The proportion of the parts of the suture from the front are $1\frac{1}{2}$, 1, 2. In front of the eye the area of the movable cheek is about one and a half times as wide as the marginal fold, behind the eye it is more than twice as wide. The cheek bore a spine, but as this is broken the length is not known; as the first three pleuræ apparently had no spine, the genal spine probably extended as far back as the third pleural segment.

Sculpture.—The surface is granulated with elevations of irregular form, which on the cheeks and glabella show a tendency to coalesce, forming irregular rugulose ridges; on the front of the glabella they have an obscurely concentric arrangement.

Size.—Length of head-shield, 20 mm.; width, 34 mm. Length of thorax, 15 mm., width exclusive of spines, 29 mm. Length of pygidium, exclusive of spines, 15 mm. width, without the spines, 27 mm. Total length, 50 mm. Loose pygidia show that these dimensions do not give quite the full size

A comparison of the head of this species, with that of *Dorypyge quadriceps*,[1] will show that it has all the generic characters of Dorypyge; it differs from that species in its less massive occipital ring and posterior border, and its more oblique ocular fillet.

ZACANTHOIDES SPINOSUS, Walcott.

Oxygia (?) spinosa, Walc., U. S. G. S. Monog. viii., p. 63, pl. ix., fig. 22.
Olnoides spinosus, Walc., Bull. 30, p. 184, pl. xxv., fig. 6.
Zacanthoides spinosus, Walc., Olenellus Zone, p. 586.
Embolimlus spinosa, Roem., Acad. Nat. Sci., Phil., Proc., 1887, p. 15, pl. i., fig. 3.

The occipital ring is said by Prof. Roeminger to have a triangular projection, this is sometimes seen to project backwards in a spine that may be 8 mm. long; the base of this projection is bounded on each side by a shallow furrow that crosses the occipital ring, dividing it into three lobes. The ring has also a tubercle on this triangular projection, the occipital spine is not connected with this, but with the back of the triangular projection.

[1] U. S. Geol. Surv. Bull. 30, Pl., xxix., fig. 1 and 1*a*,

Detached pleuræ are found which show that long spines were attached to the ring in the joints of the rachis, in some cases these spines were as long as the straight part of the thoracic segment to which they were attached.

Development of the Young.—Young heads 5½ mm. long do not differ much from the adult, except in the proportion of parts; the rachis of the head shield at this stage is more than twice as long as wide; when grown to the size of 7½ mm. this part is two-thirds wider than long, but in the full size (20 mm.) it is only a half longer than wide.

The middle piece of the head in this species considerably resembles some of the species of Dicellocephalus, Hall & Whitfield, from Wisconsin.[1]

The type of this species was found by Mr. Walcott in the Eureka district of Central Nevada, and Roeminger's form appears to be a variety. The following differences may be noted. The head of the Mount Stephen fossil is twice as long as the width of its glabella; the Eureka form is two and a half times as long; in the former the dorsal suture approaches the glabella to one quarter of its width, in the latter it almost touches the glabella; also in the former the glabella is proportionately shorter, and the eye-lobe more strongly arched.[2]

The species in the Cambrian of the west of Europe which most nearly approaches this species in the form of the thorax aud pygidium is *Parabolina spinulosa*; in that, however, the position and shape of the eye is quite different.

OGYGIA Brongniart.

Ogygia (Ogygopsis) Klotzi, Roem.

Ogygia Kotzi, Roem., Acad. Nat. Sci., Phil. Proc., 1887, p. 12, pl. i., fig. 1.
Ogygopsis Klotzi, Walc., U. S. Nat. Mus. Proc., 1888, p. 446.

Many examples show the outlines of this species; the size and details of the parts appear to be as Roeminger has described them, though there are some differences. The severe flattening of the tests in the shale has modified the surface features considerably, making prominent, portions of the test which were not so when the animal was living. The eye-lobe is an example; this in less uncompressed heads rises gradually to the margin, but in most a narrow rim is elevated along the margin, because this part of the lobe was a thickened arch. The ocular fillet appears to have been brought into unusual prominence by the same cause. Upon these two features Mr. Walcott has founded his genus. There is, however, reason for a sub-generic distinction in the shape of the eye-lobe, which is not nearly so strongly arched as in the

[1] See Preliminary notice of Fauna of Potsdam Sandstone [in Wisconsin], Hall & W., Pl. x., figs. 1 and 4.

[2] U. S. Geol. Surv., Memoirs, viii., pl. ix., fig. 22,

European Ogygiæ, nor so close to the glabella. In this the American form shows a less advanced stage of development, and so perhaps belongs to an older fauna. The oldest European Ogygia is of the Tremadoc group,[1] = Dicellocephalus Fauna.

The thorax is wider near the pygidium than at the head-shield; and the geniculation of the pleuræ, where the pleuræ bend backward, recedes further and further from the axis in going backward.

Sculpture.—The surface of the test is very finely granulated.

There appears to be a wide and a narrow form of this species, indicated by the comparative width of the rachis and lateral expansions of the body; in some examples the side lobes of pygidium are nearly twice as wide as the rachis, in others they are only one and a half times as wide.

Development of the young.—Roeminger examined tests of this species from a length of 16 mm. upward. In Mr. Walker's collection some of 11 mm. and one of 9 mm. were observed; the younger ones show some differences from the adult. In the 11 mm. tests (one tenth of the length of of the adult) there are tubercles on the thoracic rings for the attachment of spines; in one example these spines are attached to back of the rings; that of the occipital ring crosses two joints of the thorax, and that on the last joint of the thorax crosses three rings of the pygidium. In the adult all these spines have disappeared except that the fifth joint is sometimes seen to have a short spine. In the young shields the geniculation of the pleuræ, and the relief of the rachis are more pronounced than in the adult.

In the 11 mm. test there are 8 joints in the thorax and 10 in the pygidium, and 8 costæ on the side lobes of the latter. At this age then the species had the full number of joints in the thorax, but lacked two of the full number in the pygidium. Tests of 22 mm. length had an additional joint in the pygidium, and in tests 35 mm. long, the full number was attained.

A difference from the adult is observable in the length of the eye-lobe of the young: in these the proportion between the length of the anterior extension of the suture of the eye-lobe, and of the posterior extension are respectively 1, 1, 2; in the adult it is $1\frac{1}{2}$, 1, $2\frac{1}{2}$ or 3. This contraction of the eye-lobe is in accordance with what has been observed in other genera, *e. g.* Paradoxides.

[1] Highest Cambrian of English Geologists. Lowest Ordovician of the Swedes and Germans.

ORYCTOCEPHALUS, Walcott.

Oryctocephalus Walkeri n. sp. (Pl. III., fig. 2.).

Outline without the movable cheeks sub-oval, with them parabolic. Head-shield broadly semi-circular. Middle piece sub quadrate. Anterior marginal rim narrow. Glabella broad and club-shaped, marked by three pairs of circular, shallow pits in place of glabellar furrows; the two posterior pits connected by a shallow, arched furrow, and the pits on each side of the glabella connected by a shallow depression, parallel to the axis of the glabella; there is a pair of small pits at the anterior angles of the glabella indicating a fourth pair of furrows. The dorsal furrows are deep at the front and sides. The fixed cheek has a narrow area in front of the ocular fillet, and behind the fillet is triangular, and at the back nearly as wide as the glabella; the eye-lobe is narrow and reaches nearly to the posterior marginal furrow; inside the eye-lobe and ocular fillet, which is prominent is a shallow furrow that nearly connects with the posterior marginal furrow. The posterior furrow and fold are narrow and distinct. The occipital ring has a moderate breadth and a well marked furrow.

The movable cheeks are narrow and carry long spreading spines, which reach as far back as the middle of the pygidium; the points of the genal spines are as far apart as the body is long. The area of the cheek is twice as wide as the marginal fold, and the genal spines are twice as long as the cheek.

An individual 4½ mm. long has apparently 6 joints (possibly 7) in the thorax; one of 10 mm. has at least the same number. The pleuræ are flat and have oblique furrows, and are abruptly bent backward at the end, where each bears a slender spine, that on the 6th (or last ?) segment being somewhat longer than the others, and is about one and a half times the length of the body of the pleura.

The pygidium is only known from an individual 4½ mm. long, in which the line of division between the tail-shield and the body segments is not clearly shown. Assuming that the thorax has six joints, there are five somites in the pygidium, which has five oblique furrows, the posterior ones being bent more and more backward, toward the rachis. The rachis is separated by about one-third or one-quarter of its length from the posterior margin. There appear to be weak spines around the margin.

Sculpture.—The surface appears to be minutely punctate.

Size.—The largest head observed indicates a length for the whole body of 14 mm. Width at the genal angles, 11 mm. Width of middle piece of the head-shield, 8 mm.

This species differ from *O. primus*, Walc., in its broader glabella and semi-circular pygidium, with the rachis not reaching the hind-border.[1]

Oryctocephalus is evidently related to Parabolina and Parabolinella of the European Upper Cambrian; it is a form of the Olenidæ which has retained certain larval characters that are absent from the related genera in Europe, as the extended eye-lobes, and perhaps the pits in place of furrows on the glabella. Such pits are seen in the young of *Ceratopye forficula*, Sars., but not in the adult.[2]

In its general aspect *Bathynotus holopyga*, Hall, is much like *O. Walkeri*; both have a glabella extending to the front margin, prolonged eye-lobes, narrow free cheeks and extravagantly long genal spines. Other points of resemblance may be noted.[3]

Four examples of this species were found.

I have much pleasure in dedicating this species to Mr. B. E. Walker, in whose collection the first example was found.[4]

Age of the Fauna.

Dr. Roeminger went no farther in determining the age of these fossils than to say that they were "primordeal." Mr. Walcott who subsequently examined the fauna determined that it should be referred to the upper portion of the Middle Cambrian, and compared it to a fauna which he had determined to be of this age.[5] The correlation is based on several species of this fauna that he had described, and which are found in the Mount Stephen Fauna. Of these may be mentioned *Zacanthoides spinosus*, *Bathyuriscus Howelli* and the species referred to *Olenoides Nevadensis* [*Neolenus serratus.*] Other species occur at Mount Stephen, but on the basis of the above species the fauna is determined to be of the age of the upper part of the Middle Cambrian. As Mr. Walcott claims that the Middle Cambrian is essentially the Paradoxides Zone I am compelled to dissent from this decision, for I think the fauna much younger, and base this view on a consideration of the genera of trilobites present.

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[1] The pygidium assigned to *O. primus* is very like that of *Cheirurus foveolatus*, Ang. In view of the known tail-shield of *O. Walkeri* it seems doubtful if this pygidium is properly placed. (See Brögger, "Die Silurischen Etagen 2 und 3," pl. ii., fig. 5.)

[2] Die Silurischen Etagen 2 und 3, pl. iii., fig. 16.

[3] U. S. Geol. Surv. Bull. 30, pl. xxxi., fig. 1.

[4] Since the above was put in type, Mr. R. F. Cowper Reed has published in the Geological Magazine, London, August, 1899, the description of a new species of Oryctocephalus (*O. Reynoldsi*) from the Mt. Stephen Fauna. It would seem however to be a different species from the above. It has shorter genal spines and broader movable cheeks; the pygidium is longer, is composed of more numerous somites, and has a pair of spines that much exceed the others in length. The species also is somewhat longer than Mr. Walker's.

[5] Am. Jour. Sci., 1888, vol. xxxvi., p. 164.

As bearing upon this point, and showing which are the typical species of this fauna, I give a list of the genera with the number of individuals of each found on the slabs and fragments placed in my hands by Mr. Walker, and giving the horizon where related species or genera are found.

Genera of the Mount Stephen Fauna showing the comparative number of individuals and the horizon where related species or genera are found.

Name.	No.	Horizon Elsewhere.
Ogygia (Ogygopsis)	56	Ceratopyge Fauna (Tremadoc) and upward.
Bathyuriscus	49	Upper Paradoxides beds.
Zacanthoides	37	Peltura Fauna.
Neolenus	32	do
Ptychoparia	25	Cambrian { Paradoxides beds and upwards.
Dorypyge	9	Upper Paradoxides beds.
Agnostus	5	Same range as Ptychoparia.
Corynexochus	3	Upper Paradoxides beds.
Dolichometopus	1	do do do
Oryctocephalus	2	Peltura Fauna.
Conocephalites	1	Upper Cambrian.

Agnostus and *Ptychoparia.*—These are the only types present in this fauna that are typical Paradoxides-zone genera. But as they range up into the Ordovician they are of no value for exact correlation. If we should be guided by species-marks the Agnostus is a Limbatus of Upper Cambrian type, since the lateral spines of the pygidium are wanting. Of Ptychoparia it may be said that it is not found in any fauna below Paradoxides, otherwise as a genus it is of no value for comparing Cambrian faunas with each other.

Corynexochus and *Dolichometopus.*—These two genera are so far known only from the Upper Paradoxides beds. The first, judging from the record, is rare in Sweden; it is scarce at Mount Stephen. The Dolichometopus in the closeness of the eye-lobe to the glabella shows an advance in development beyond the other two species known, and therefore it may be inferred that it came somewhat later in time.

Dorypyge.—This type heretofore has been referred to the Upper Paradoxides beds. It is there that Dr. Dames placed it after a review of the Chinese Cambrian fauna, in which it was first recognized. It was at this horizon too that the author found it in the Cambrian terrane near

St. John, N.B. But when we consider the species, it appears that the Upper Paradoxides beds species is not this one, but one which according to Mr. Walcott is found 2,000 feet lower down in the Cambrian succession of the Rocky Mountains, in company with Olenellus. It may be inferred thus that the genus lived on through the intermediate time, and that the Mount Stephen species is a later development of the type.

Bathyuriscus.—There remains one genus of the Mount Stephen fauna which has relatives in the Upper Paradoxides beds. This is Bathyuriscus, and they are connections which at first sight seem rather distant. If, however, we strip from *Anomocare limbatum* its flattened borders, the remainder of the test will be a not inapt representation of Bathyuriscus. A condensation of such expanded borders is in some genera a mark of the adult stage, and in others is a mark of development in the later species. It may be suggested then that the Anomocare phylum has given rise to Bathyuriscus, and that the latter belongs to a later fauna than the former.

Neolenus, *Zacanthoides* and *Oryctocephalus.*—We come now to speak of a group of trilobites of the Mount Stephen fauna, which are more difficult to deal with. They have one feature in common, however, which is of some significance, namely, the sharp backward angulation of the pleuræ outside the pleural groove, an angulation which applies to the thorax as well as the pygidium. So far as I recollect, no species with this type of pleura are found in the Paradoxides beds; they first appear in the Olenus Fauna, and are a marked feature of the Peltura fauna, as may be seen in Parabolina, Parabolinella and Sphærophthalmus. This would indicate the Peltura fauna as the home of such genera as those named at the head of this paragraph. But the Mount Stephen genera differ notably in two respects from those of the Peltura Fauna of the north of Europe; in the first place their eye-lobes are set much further back, and in the second they have much fewer joints in the thorax. The advanced and condensed eye-lobe is a mark of high development in Cambrian trilobites; but on the contrary, numerous joints in the thorax at the expense of the pygidium is a feature of low organization; it marks the Lower Cambrian as compared with the Upper Cambrian and Ordovician trilobites. We can only suppose that these two groups of trilobites with backward-angulated pleuræ, originated from the same root stock in different areas, and had an independent development. So far as evidence of structure goes they may have been contemporary.

Ogygia.—This is essentially an Ordovician type, and to find it in such a fauna as that of Mount Stephen is something of a surprise. The species is not strictly typical of Ogygia, and the points in which it differs (as the eye-lobe less arched, and more distant from the glabella) may indicate an earlier form of the genus, and one which is actually Cambrian.

Summing up the points brought forward in this review of the

generic characters it appears to the writer that the fauna at Mount Stephen cannot be older than the Peltura Fauna.

Another view of the fauna, namely, the comparative abundance of individuals leads to a similar conclusion.

Referring to the table on a former page it will be seen that over two hundred individuals (or parts of individuals) have been under review in this examination of the Mount Stephen Fauna. From this number we need to eliminate Agnostus and Ptychoparia, as giving no leading indications. Bathyuriscus may also be taken out, as its affinities are obscure. There remain 140 examples for comparison. Of these thirteen only (the individuals that represent Dorypyge, Corynexochus and Dolichometopus) point to the Upper Paradoxides beds, the others indicate the Peltura or a higher fauna. It is evident that this tenth (the 13) represents the dying fragment of an earlier fauna, and that the Mount Stephen fauna is essentially *Upper Cambrian*.

Comparative growth of the pygidium at the expense of the thorax in Cambrian trilobites as shown by typical faunas.

Lower Paradoxides Fauna.	Thorax.	Pygidium.	Peltura Fauna.	Thorax.	Pygidium.	Mount Stephen Fauna.	Thorax.	Pygidium.
Paradoxides						Ogygia	8	11
P. lamellatus	16	2	Sphærophthalmus.	9	5	Bathyuriscus	9	6
P. Regina	17	3	Ctenopyge	9	4	Zacanthoides	9	5
P. Tessini	20	4	Peltura	12	3	Neolenus	7	5
Anopolinus	17	5	Leptoplastus	12	3	Corynexochus	7	3
Solenopleura	11	3	Parabolina heres	12	4	Dolichometopus	8	4
S. Acadica	14	4	P. spinulosa	12	5	Oryctocephalus	7	5
Ptychoparia striata	14	7	Acerocorne	12	6	Dorypyge	7	6
P. Linnarssoni	13	5	Eurycare	12	6	Ptychoparia	18	3
Liostracus	15	3						
Conocoryphe Sulzeri	16	3						
C. Baileyi	16	3						
Ctenocephalus	14	2						
Average per genus.—	15·3	3·7		11·2	4·5		8·9	5·3
Comparative average of joints in thorax and pygidium	4	—1		2·3	—1		1·7	—1
Total average somites.	(19)			(15·7)			(14·2)	

In the preceding discussion we have regarded the trilobites of Mount Stephen from the point of their genetic relationship, it might be well also to consider them in relation to the development of the trilobites as a group.

Except the dwarf and peculiar genera Agnostus and Microdiscus, we find that the earliest trilobites all had short pygidia. That the pygidium was insignificant as compared with the rest of the body, and perhaps more perishable, is shown by the fact that for 100 heads of trilobites of the Protolenus Fauna only one pygidium was recovered. Somewhat similar conditions prevailed in the Lower Paradoxides Fauna, though here the pygidium begins to assume more importance. When the Upper Paradoxides beds are reached, a few, and mostly small species appear, in which the pygidium become of greater relative size, such as the genus Dorypyge. These conditions continue until the Ordovician is reached, when we find a type of trilobite becoming dominant in which the pygidium equals or excels the head-shield, such are Asaphus and its allies. So important do the tail-shields become that they exceed the head both in size and durability. When Asaphi are collected from the Utica slate where they are common, more pygidia than heads are found. Although this feature of occurrence is not noticeable in the Ogygia of Mount Stephen, we do observe that here for the first time in the Cambrian is a genus in which the pygidium is longer than either the thorax or head-shield; it would be possible, therefore, so far as the comparative size of the three parts of the body is concerned, for this species in its enrolment to cover the head-shield with the pygidium.

Not only by taking individual genera but by taking the whole assemblage of genera of a fauna, the same progression in the growth of the pygidium at the expense of the thorax may be noted. Thus taking the genera of the Lower Paradoxides Beds which is the typical fauna of the Lower Cambrian,[1] it appears that there is an average of 4 joints to the thorax for one in the pygidium. Then taking the genera of the Peltura Fauna,[2] which is typical for the middle of the Upper Cambrian, there is an average of $2\frac{1}{2}$ joints in the thorax for one in the pygidium. Applying this method of comparison to the fauna of Mount Stephen, it appears that its genera[3] have a still more modern aspect, for they give an average of only 1·7 joints in the thorax to one in the pygidium. If we eliminate on one hand the Ordovician genus Ogygia, and on the other Ptychoparia, a survival of the Lower Cambrian the proportion is little changed, for it is 1·6.

From other points of view we see a progression in these faunas, condensation of parts is supposed to be a mark of progression, and this appears in the average number of somites in the thorax and pygidium.

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[1] Paradoxides Anopolinus, Solenopleura, Ptychoparia, Liostracus, Conocoryphe and Ctenocepalus.

[2] Peltura, Leptoplastus, Parabolina, Acerocare, Eurycare, Ctenopyge and Sphærophthalmus.

[3] Ogygia, Bathyuriscus, Zacanthoides. Olenoides, Corynexochus, Dolichometopus, Oryctocephalus, Dorypyge and Ptychoparia.

Of the Lower Cambrian genera here cited which is 19·; in the Peltura Fauna it is reduced to 15·7; while in the Mount Stephen Fauna it becomes 14·2. A more notable difference shows in number of joints of the thorax, this in the genera of the Paradoxides Beds is 15, in the Peltura Fauna 11, but in the Mount Stephen Fauna 9.

If we are to be governed by faunal distinctions without regarding the stratigraphy, it appears to the present writer, that this fauna of Mount Stephen may be claimed to be of even of later origin than the Peltura Fauna.

III.—*Studies on Cambrian Faunas, No. 4.—Fragments of the Cambrian Faunas of Newfoundland.*

BY G. F. MATTHEW, D.Sc., LL.D.

(Read May 25th, 1899.)

Our knowledge of the Cambrian Faunas of Newfoundland has been a matter of slow growth, and has been participated in by several geologists. First Jukes and then Salter made known the existence there of Cambrian rocks. Next Mr. E. Billings described the species collected by the Geological Survey of Newfoundland under Alexander Murray. All this while no very definite proof was shown that any other part of the Cambrian beside the Paradoxides Zone existed in that island. But the great thickness of measures found to overlie the Paradoxides Beds appeared to indicate that other portions of the Cambrian system were present.

In 1885 Mr. J. P. Howley, who succeeded Mr. Murray as director of the Geological Survey of Newfoundland, sent to the writer a small collection of fossils from several localities on that island, from which he was able to determine something more in reference to the Cambrian Faunas of the island, and to show that several subzones of Paradoxides were present, and to describe one new species of trilobite.[1] The horizons noted were as follows :—

A. Horizon of Agraulos strenuus (= Protolenus Fauna).[2]
B. " " Conocoryphinæ } (= Subzone of P. Eteminicus.)
C. " " Paradox, spinosus }
D. " " P. Tessini (= Subzone of P. Abenacus).
E. " " P. Davidis (unknown in New Brunswick.).

At that time the Protolenus Fauna was unknown, and owing to the few species placed in the hands of the writer, from the horizon of *A. strenuus* its bearing on the question of a fauna older than Paradoxides was not clearly seen.

In 1888 Mr. C. D. Walcott, of the U. S. Geological Survey, visited Newfoundland and found that the horizon *A.* contained among other fossils a fine species of trilobite which he referred to the genus Olenellus, and upon this basis claimed that the Olenellus Fauna, which up to that time had been thought by American geologists to be above Paradoxides, was actually below that genus and therefore older. This view had already been suggested by the Swedish geologists, and especially by Dr. W. C. Brögger, and was now generally concurred in.

[1] Trans. Roy. Soc. Can., vol. iv., pt. iv., p. 150.

[2] The notes in brackets represent the corresponding zones worked out in New Brunswick.

The present author accepted this view, put forward on such high authority, but has since found reason to infer that the conclusion so universally adopted, was not based on a foundation sufficiently wide, and that we may have to go back practically to the arrangement of the Cambrian Faunas of North America, propounded by Billings in 1864,[1] in which the succession from below upward is given as :—1. St. John's [St. John] group. 2. Lower Potsdam. 3. Upper Potsdam. By "Lower Potsdam" Mr. Billings understood the rocks containing the Olenellus Fauna. In his time, also, the St. John Group was known only to contain a Paradoxides Fauna.

The impossibility of finding the genus Olenellus or *its accompanying fauna* in the strata of the eastern provinces of Canada, below Paradoxides (which strata were eventually found to contain a considerable fauna of trilobites), led him in 1892 to propound the view that Olenellus might be cotemporaneous with Paradoxides but confined to a different habitat.[2] This surmise was in a sense confirmed by the finding of the *fauna accompanying* Olenellus, though not that genus itself, in company with the highest subzone of Paradoxides at Hastings Cove near St. John, in 1896.

Curiously too, the incoming of this fauna is associated with conditions similar to those which led to the introduction of the Upper Paradoxides Fauna in Sweden ; for there too, limestones appear in the series, and around the Hunneberg, conglomerates are associated with them. It would seem that in both countries littoral species living where clear waters prevailed, and of a more advanced type of structure than Paradoxides and its companions, crowded out these inhabitants of the muddy bottoms. A change of conditions then, introduced this fauna both in Sweden and Eastern Canada.

The Protolenus Fauna was also one which flourished best in shallow clear water, hence we are likely to find resembling species between it and the Paradoxides-Dorypyge sub-fauna, which so far as now appears is the horizon of Olenellus (sens. strict.) This parallelism is seen in the numbers of Agrauloid trilobites in both faunas ; and in *Micmacca* of the lower fauna (Protolenus Fauna), which is parallel to *Bathyuriscus* and *Dorypyge* of the upper (Paradoxides-Dorypyge).

Further we find that Olenellus in the West of America is linked with Upper Cambrian Faunas rather than Lower. The fauna of Mount Stephen which we have discussed in the preceding article is, according to Mr. Walcott, of the same age as the Prospect Mountain Limestone ; this is shown by the number of species of trilobites common to the two.[3] But the Prospect Mountain Limestone grades down into shales containing Olenellus, and this Olenellus is accompanied by *Olenoides* (or *Dory-*

[1] Geol. Surv., Newfoundland, 1864, p. 46.
[2] Trans. Roy. Soc., Can., vol. x., pt. iv., p. 3.
[3] See U. S. Geol. Surv., Bull. 30, p. 31 et seq.

pyge) *quadriceps*, a species of the Paradoxides-Dorypyge sub-fauna. Furthermore *D. quadriceps* is said to extend up 500 feet in the limestones, and at the top of the limestones is *Olenoides* (*Zacanthoides*) *spinosus*, a common species of the Mount Stephen Fauna which, according to our view, is well toward the summit of the Cambrian system.

To us therefore it seems that the appearance of Olenellus (sens. strict.) in the Cambrian Faunas of America marks the irruption of a new group of forms that ousted the typical fauna of Paradoxides, which may be considered to have reached its culminating point in the faunas of *P. Tessini* and *P. Davidis*. These would be the conditions in Atlantic North America. Further west the Olenellus Fauna appears in most places to have invaded continental areas, as it is preceded by beds of quartzite and sandstone; and hence all the earlier Cambrian including the Protolenus and Paradoxides Zones exhibit no faunas in those regions.

The Newfoundland fossils described in this paper are not all new, but consist partly of new species and partly of species already described, on which new light has been obtained. They are arranged according to their zoological standing, so far as the author has been able to appreciate it.

A few words descriptive of the conditions of sedimentation will not be out of place, and further notes on the same subject will be found in the succeeding article where the Cambrian sediments are touched on incidentally in connection with the Etchiminian.

Shales predominate in the Cambrian strata of Eastern Newfoundland, though according to the published geological reports extensive deposits of sandstones occur both in the Upper and Lower Cambrian; the shales of the latter are in the Protolenus Zone chiefly of a red colour, but in the Paradoxides Zone mostly gray.

At Smith Sound the most important land marks in the Lower Cambrian are the first, or basal limestone conglomerate (in the eastern basin a slate conglomerate) and a second conglomerate limestone; both of these are in the Protolenus Zone. Higher up in the *P. eteminicus* subzone is another limestone conglomerate.

In Conception Bay similar conditions are found, but there the basal conglomerate rests on the altered rocks of the Huronian or Intermediate system; limestone accompanies this conglomerate, and in the upper part of the Protolenus Zone another limestone band appears.

The Upper Cambrian is quite different. It has no limestone beds, but abounds in flaggy layers and sandstones alternating with shales. In the absence of sandstone the shales become quite fine in texture and dark in colour like the alum shales of Sweden.

BRACHIOPODA.

OBOLELLA, Billings.

Obolella Atlantica, Walc.

Obolella atlantica, Walc., Proc. Nat. Mus., vol. xii., p. 36.
Obolella atlantica, Walc., Fauna of Olenellus Zone, 1890, p. 611, pl. lxxi., figs. 11*a* to *c*.

"A small species that occurs in great abundance in Newfoundland, and also less frequently at North Attleboro', Mass. It is of the type of *O. crassa*, but differs in the details of the inner surfaces, and the average smaller size."

As regards the difference of details from *O. crassa* no description is given, and the "Olenellus Fauna" furnish the only means of discriminating the two species.[1] The surface markings are coarser and more rugged than those of *O. crassa*.

This species was found in the shale which forms a layer in the first conglomerate, and also through a considerable thickness of the overlying shales west of Foster's (Smith's) point, Smith Sound. It thus belongs to the lower part of the Protolenus Zone.

RAPHISTOMA, Hall.

Raphistoma (?) Kelliensis, n. sp. (Pl. III., figs. 4*a* and *b*.)

The cast of a gasteropod which appears to belong to the above genus is worth describing here, as it holds an intermediate place chronologically between Shaler and Foerste's species of Attleboro', and the numerous species of Raphistomid shells that come in with Calciferous in western Newfoundland, and the Lower Ordovician limestones further west.

The shell is discoid, of about three whorls; the whorls are gently convex, both above and below the keel, but become flattened toward the somewhat angulated peripheral ridge or keel. The last whorl rapidly enlarges toward the mouth, and is ornamented on the most prominent part of the upper slope of the whorl by a row of faintly elevated tubercles. The front of the shell is concealed in the matrix, and the shape of the orifice is only imperfectly apparent, the curve of the lip is therefore doubtful, but appears to correspond to that of Raphistoma. The umbilicus is not visible. The width of the last whorl at the aperture is greater than the width of the spiral part of the shell above it, and nearly equal to the height of the shell.

[1] Judging from the examples in hands, I am under the impression that the printer has misplaced the reference to the interior of the dorsal and ventral valves of this species, for I find that fig. 1*c* appears to be the mould of the interior of a ventral valve, and fig. 1*a* that of a dorsal valve.

Size.—Height of the spire (which is somewhat crushed down) 13 mm. Height and width of the aperture each about 12 mm.

Horizon and locality.—The sandstones of Kelly's Island in Conception Bay, which by Mr. Howley and Mr. Walcott are considered to be Upper Cambrian.

In general outline this species is not unlike *R. lapicida*, Salter, of the Black River limestone.[1] It is still more like *R.* (*P*). *Hortensia*, Bill., and *R.* (*P*). *Harpya*, Bill., of the Calciferous of western Newfoundland[2]; it is most like *R. staminea*, Hall, of the lower part of the Chazy in New York,[3] but the last whorl enlarges more rapidly than in any of these species.

Shaler and Foerste describe a minute gasteropod from lower Cambrian shale at Attleboro', Mass,[4] which shows a general resemblance to *R.* (?) *Kelliensis*, and the species cited above, but in its small size corresponds to other spiral gasteropods of the Protolenus Zone. It has about the same number of whorls as the Kelly's Island species and may be collaterally ancestral to this type.

ANNELIDA.

ARENICOLITES, Salter.

ARENICOLITES ANTIQUATUS, Bill. sp. (Pl. IV., figs. 1*a* and *b*.)

Arthraria antiquata, Bill., Palæoz. Foss., vol. ii., pt. i., p. 66, fig. 33.

This fossil, supposed by Billings to be part of a jointed plant, is evidently the gallery which connects the paired burrows of a sea worm of the genus Arenicolites. That author's description is as follows:—

"*Arthraria antiquata* (n. gen. and sp.) The fossils for which the above generic and specific names are proposed, are small cylindrical bodies, with usually an expansion at each end, giving the form of a dumb-bell. Those that I have seen are from six to nine lines in length, and, from the manner in which they are grouped upon the surface of the stone, they appear to me to be segments of a jointed plant. They exhibit no internal structure, but the form is very constant. Similar forms occur in the Clinton formation."

Arenicolites delighted in clear water and a clean sandy bottom; in which it built up the vertical holes which led to its burrow, as fast as the sand accumulated on the bottom. When, however, the water was invaded by muddy sediment it was in the habit of abandoning its old burrow and forming a new one in the freshly deposited mud. Here as the sand

[1] Can. Organic Remains, Decade i., p. 12, pl. ii., figs. 1 to 3.
[2] Palæozoic Fossils, vol. i., p. 227, fig. 211.
[3] Palæontology of New York, vol. i., p. 29, pl. 6, figs. 4 and 5.
[4] Bull. Mus. Comp. Zoology, Cambridge, 1888, vol. xvi., No. 2, p. 30, pl. ii., fig. 11.

accumulated over the muddy layer the worm continued to keep the two ends of the burrow open and connected with the surface by the vertical holes by which it had egress and regress. In this species the holes are not strictly vertical but are inclined toward each other, so that if the sand accumulated to a considerable depth the pits approached each other more and more at the orifice, so that eventually they almost came in contact.

The rock in which these burrows are made are inclined to split along the shaly layers, because the sand of the flaggy layers is more firmly cemented than the clay of the shaly layers; in this way surfaces are exposed that are covered with the horizontal galleries of this species. As Arenicolites had the habit of enlarging the ends of the horizontal gallery somewhat, this gallery often assumes the dumbbell appearance to which Mr. Billings alludes.

Size.—Some of the examples I have collected are larger than those described by Billings; they average about eleven lines (24 mm.) though some are one and a quarter inches in length (32 mm.).

Horizon and Locality.—Near Lance Cove, Great Bell Island, Conception Bay, Newfoundland, in beds referred to the Upper Cambrian, by Messrs. Howley and Walcott.

Arenicolites brevis ?

Arenicolites brevis, Matt., Trans. Roy. Soc. Can., vol. viii., pt. iv., p. 159, pl. xi., figs. 13 *a*, *b* and *c*.

On the surfaces over which the above burrows are scattered there are smaller ones, which are both narrower and shorter; the sandstone in which they occur, do not have any burrows sufficiently well exposed to show whether they have short holes leading to the gallery, as in *A. brevis*, or longer ones, but they are comparable to this species in the size and length of the galleries.

Size.—Length of the gallery 11 to 14 mm.; width 2 mm.

The length of the vertical holes in this species probably depends upon the thickness of the sandstone bed in which it is found, so that a variation in this respect is not of much importance.

CTENICHNITES.

Ctenichnites ingens ?

Ctenichnites ingens, Matt., Trans. Roy. Soc. Can., vol. viii., pt. iv., p. 151, pl. xiv. figs. 1 to 12 and ? 13 to 15.

On the surfaces which carry the casts of the galleries of Arenicolites, quite distinct groups of the striæ, which compose the above tracks, are found. The slabs collected are too small to show long tracks such as

occur on layers of the flags of Div. 2 *b*, of the St. John group at St. John, but the arrangement of the markings is quite similar to these.

HYOLITHES, Eichwald.

HYOLITHES HATHEWAYI, n. sp. (Pl. III., figs. 5*a* to *d*)

A large slender conical species, having quite a thin test. As the shell is flattened in the shale the exact form of the orifice is not known.

The aperture has on the dorsal side a moderately arched lip, the height of the lip being scarcely one-quarter of the width. On the ventral side the aperture was emarginate at two points corresponding to the boundaries of the middle area on that side.

In the known portion of this shell there were three conditions of structure ; in the middle area on the ventral side the abraded shell shows close set parallel bars at the proximal end ; these bars were divided across at intervals. In the second third of the shell these bars are short and broken by more frequent cross-lines giving an apparently cancellated structure. In the upper third of the shell these longitudinal bars do not appear, but the shell is indented by transverse growth-lines.

The surface of the shell on the dorsal side was smoother, but marked by distant undulations of growth, curved to correspond to the curved aperture.

The ventral side was divided into three longitudinal areas, of which each lateral one was half of the width of the central one.

The rate of tapering of this conical tube was about 1 to 4 ; apical angle about 20°.

Sculpture.—The dorsal side appears to be smooth and shining, but with a lens the surface is seen to be crossed by very fine transverse and longitudinal striæ ; there are also transverse grooves that are more distinct, at intervals of 1 or 2 mm. apart.

The ventral side is marked by growth-lines, narrow grooves about 1 mm. apart, but irregularly spaced ; and by faint striæ parallel to these and only visible with a lens. In passing from the lateral edge of the shell the growth-lines and accompanying striæ, run backward at a moderate angle to the groove which divides this area from the middle area of the shell ; here they arch forward, and then at the middle part of the mid area are nearly transverse, crossing the median line of the shell in a gentle arch. The lateral areas of the ventral side have a few longitudinal grooves more distinct than those on the dorsal side.

Size.—Length of the known portion of the tube, 50 mm. ; estimate of entire length, 65 mm. ; width of the aperture, 16 mm.

Locality and horizon.—Upper part of the Protolenus Zone at Manuel's, Conception Bay.

This species is of about the size and form of *H. princeps*, Bill., which occurs according to Mr. Walcott in number 2 of the Manuel's Brook Section (the lower part of the Protolenus Zone) and Billings's description of the course of the growth-lines of that species agrees with those of *H. Hathewayi*,[1] but the dorsal lip in *H. princeps* projects much more. Walcott's figures of Billings's species gives the same highly arched lip,[2] but no indication whatever of the peculiar sinuate growth-lines and apertural outline on the ventral side of *H. Hathewayi*.

Of the Swedish forms of Hyolithes described by G. Holm, the two Ordovician species, *H. concinnus*, Holm, and *H. innotatus* Linrs.,[3] come nearest to our species, the former in the wide lateral areas of the ventral side, the latter in its more uniform surface, but in both the boundary between the areas on the ventral side is a ridge, not a groove as in *H. Hathewayi*.

An operculum found with this species is so different from what one would look for in this type of Hyolithoid shell, that I hesitate to ascribe it to the species. Width on the two sides of the nucleus nearly equal. Outline oval, diameters 10 and 12 mm. A groove interrupted in the middle traverses the long diameter, a raised triangular area with the apex at the nucleus traverses one side of the operculum, which is marked by faint concentric striæ.

This form of operculum occurs commonly with Orthotheca, but Barrande figures one as found in the same bed with *H. parens* (Cambrian); this Bohemian species agrees with the Newfoundland form in the low arching of the lip.[4]

A group of tubes of *H. Hathewayi* has an arrangement on the layer of shale where it is found, that suggests a gregarious habit by the way in which the apices of the tubes approximate to each other, and a similar association of the tubes has been observed in Orthotheca.[5] The attitude of these tubes suggest that some Hyolithidæ were sedentary animals with the point of the tube fixed in the mud of the sea-bottom.

I have much pleasure in dedicating this interesting species to Mr. W. Frank Hatheway, my companion during the trip to Newfoundland.

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[1] Can. Nat. new ser., vol vi., p. 216, figs. 4 *a* and *b* of p. 213.

[2] Olenellus Zone, pl. lxxvi, figs. 1, *e*, *f*. and *g*.

[3] Swedish Cambrian-Silurian Hyolithidæ and Conulardiiæ, pl. ii., figs. 12 to 16, and figs. 24 to 28.

[4] Système Silurien. Part i., vol. iii., pl. 10, fig. 14.

[5] The tubes of Volborthella described by me from the shale of Div. 1 b. (Protolenus Zone) of the St. John Group at Long Reach are clustered in the same way (but not connected). It appears to the author that Volborthella (or at least the organisms that he has ascribed to that genus) are small species of Orthotheca or at least are closely allied to that genus; tubicolous sea worms may have regular diaphragms, or even perforate ones, that would easily in the fossil be mistaken for septæ, such as Orthoceras possesses.

TRILOBITA.

MICRODISCUS, Emmons.

MICRODISCUS BELLIMARGINATUS, Shaler and Foerste.

M. bellimarginatus, S. and F., Mus. Comp. Zool. Cam., Bull., 1888, vol. XVI., No. 2, p. 35, pl. 2, figs. 19*a* and *b*.

Mut. INSULARIS, n. mut.

A number of the head and tail shields of this species were found in the gray calcareous shale of a railway cutting at Manuel.

The mutation indicated differs from the type of Shaler and Foerste in having a narrower head and pygidium, and fewer tubercles on the marginal rim of the head-shield. The shape corresponds more nearly to that figured by Walcott, but the tubercles of the rim are more widely set, and the glabella is more depressed behind than in his examples. On the under side of the border of the pygidium are a series of short spines directed downward that are spaced to correspond to the tubercles of the rim of the headshield. Adjusted to each other they would form a means of locking the two shields together, without the need of absolute contact of the rims of the shields. The tubercles at the side of the head-shield are about a millimetre apart.

Sculpture.—The surface of the test when viewed with a lens is seen to be minutely granulate.

Size.—The largest head-shield observed, was 7 mm. long, and of about the same width. Shaler and Foerste indicate one of 8 mm.

Horizon and Locality.—Greenish gray calcareous shale of No. 3 Walcott section at Manuel's Brook. Protolenus Zone.

AGRAULOS, Corda.

Subgen., STRENUELLA.

Trans. Roy. Soc. Can., vol. iv., pt. iv., p. 153, figs. 3, 3*a* and *b*.

This differs from the typical form of Agraulos (*A. ceticephalus*), in the elevated glabella, heavy groove across the shield in front of the glabella, and long, or continuous eye-lobes ; the posterior marginal fold (and therefore the pleura) is strongly geniculated. *Agraulos difformis*, *aculeatus* and *excavatus* of the Upper Paradoxides beds in Sweden appears to be a later development from this stock ; these differ from the earlier ones in having a shorter eye-lobe, and longer posterior extension of the dorsal suture. Further remarks in reference to this sub-genus will be found in Transactions of the Royal Society of Canada, vol. iv., pt. iv., p. 154.

Strenuella strenua, Billings sp.

1874, *Agraulos strenuus*, Bill., Palæozoic Foss., vol. ii., pt. 1, p. 71, fig. 41.
1886, *A. strenuus*, Bill., Cambr. Faunas of C. Breton and Newfoundland, Trans. Roy. Soc. Can., vol. iv., pt. iv., p. 153, figs. 3, 3*a* and *b*.
1888, *Ptychoparia mucronata*, Shaler and Foreste (pars) Bull. Mus. Comp. Zool. vol. xvi.. No. 2, p. 37, pl. 2, fig. 21*b*.
1890, *Agraulos strenuus* (Bill.), Walc., Fauna of Olenellus Zone, p. 653, pl. xcvii., figs. 1, 1*b*, and *c*.

The description of this species as given by Billings is quoted by the author in Transactions of the Royal Society of Canada. Walcott refers to this species the *Ptychoparia mucronata* of Shaler and Foerste, with which the author agrees as regards one of the figures given by these authors—the larger figure (21*b*), the smaller one (21*a*) is probably a larval head. Of the forms figured by Mr. Walcott in the work above cited, figs. 1, 1*b* and *c*, appear to belong to this species and 1*a* probably to the following mutation.

mut robusta n. mut. (Pl. IV., fig. 3.)

Agraulos strenuus, var. Trans., Roy. Soc. Can., vol. iv., pt. iv., p. 154.
cf. *A. strenuus* (Bill.), Walc., Olenellus Zone, pl. xcvii., fig. 1*a*.

Only the middle piece of the head is known. This is sub-trapezoidal and is strongly arched in front. The anterior marginal fold is broad, flat and strongly curved in front; it is separated from the glabella by a narrow, but distinct furrow. The glabella is cylindro-conical and quite prominent; it is a quarter narrower at the front of the eye-lobes than at the occipital ring, and is evenly rounded in front; it is separated from the ring by a shallow furrow extending all across, but most deeply impressed in the outer third. The glabella shows one pair of furrows, faintly impressed at the side; but the mould of the head-shield shows two pairs of furrows, turned backward, and a very faint, third pair, turned forward. The occipital ring is broad and has a short spine projecting backward.

The fixed cheeks were narrow; exclusive of the eye-lobe the cheek was half of the width of the glabella, and is depressed before and behind. The ocular fillet which is low, begins in a low tubercle near the glabella. The palpebral lobe was wide and long; it was half as wide as the cheek and as long as the width of the cheek and eye-lobe together. The posterior marginal fold widens rapidly toward the suture, and is strongly geniculate at the middle, whence the posterior margin of the shield advances forward rapidly toward the dorsal suture. The suture extends directly backward from the eye-lobe to the posterior margin, and directly forward in front of the eyes.

Sculpture.—The surface of the test is minutely granulated.

Size.—Length of the head-shield 16 mm., width of the middle-piece, at the front, 12 mm.; at the eye-lobes 18 mm., at the posterior corners 20 mm.

Horizon and locality.—Red limestone of Brigus, and the calcareous shales of No. 3 Manuel's Brook (Protolenus Zone).

This mutation is distinguished from the type by its flattened anterior marginal fold, its larger and more prominent glabella, its occipital furrow indented at the sides, but scarcely in the middle, and its large eye-lobes.

It differs from *A. difformis*, Ang.,[1] in the sharper anterior marginal furrow, heavier eye-lobe, short occipital spine, longer glabella and direct posterior extension of the dorsal suture.

I have collected a number of heads of *S. strenua* (typical) in Newfoundland, and find it does not attain the size of this form; the two occur together both at Brigus and Manuel's, and it may be that when the parts are known the two forms may be found to be independent species.

It seems probable that fig. 1*a*, plate xcvii. of Walcott's work above cited, may be intended for this form, but if so, the anterior margin is not correctly represented.

STRENUELLA (?) ATTLEBORENSIS, Shaler and Foerste. Pl. IV., figs. 4*a* to *c*.

Ptychoparia Attleborensis, S. and F., Bull. Mus. Comp. Zoology, vol. xvi., No. 2, p. 39, pl. 2, fig. 14.

The following is the description of this species by the above authors:

"Head small, often minute; in the largest specimen, 4 mm. long. The usual size is about 2·6 mm. The glabella is oblong or slightly attenuate anteriorly. The occipital groove is low or indistinct. The occipital ring extends beyond the general posterior outline of the head, and apparently forms part of the glabella before it. The glabella is sometimes intersected by faint lateral grooves, of which there are three pairs, the anterior pair scarcely visible. Oftener these grooves are obsolete, and the glabella may, in case the occipital groove is very slight, appear as a continuous undivided body as far as the posterior margin of the head. The glabella is always convex, and considerably elevated above the general level of the cheeks. There is in some specimens a very slight trace of an ocular ridge, which runs from the anterior end of the glabella laterally, and slightly posteriorly, joining a similar slight trace of the palpebral lobes. The most marked feature of the fixed cheeks is the existence of a depression along their postero-lateral outline. The anterior border is proportionately very broad. About the character of the rim little can be said. Near the lateral margin of the border, or rather near the facial suture, there are some-

[1] Brögger-Paradox. skiferne ved Krekling, Christiania, 1878, pl. iv., figs. 1 to 6.

times two or three low tubercles visible. There is also in some specimens a faint trace of a sufficient elevation of the border to indicate an incipient marginal rim." "Locality and position. Station No. 2, North Attleborough, Mass., Cambrian."

A peculiar little trilobite which we consider near enough to this to be a mutation, occurs at Manuel's, Conception Bay.

Mut. VIGILANS, n. mut. (Pl. IV., fig. 4*a* to *c*.)

Minute. Only one example and that of the head-shield, known; this is somewhat angulated in front. No marginal fold is visible, but the wide area in front of the glabella is strongly convex, and is separated from the eye-lobe by a furrow crossing the front of the shield. The conical glabella is depressed in front and much elevated behind, where one pair of furrows is visible, the occipital ring is broken on top but appears to be divided from the glabella by a furrow, and extends backward into a spine. The fixed cheeks are strongly elevated toward the eye-lobe, which is short, convex and very prominent; there is a tubercle at the root of the ocular fillet which is transverse to the cheek. The posterior marginal furrow is twice as wide at the dorsal suture as at the glabella; the fold is quite narrow, and both arch forward toward the eye-lobe.

Sculpture.—The surface is not well preserved, as the specimen is a cast of the interior of the test, but it appears to have been tuberculate.

Size.—Length of the head-shield, 2 mm.; width of middle piece of the head, 3 mm.

Horizon and locality.—Calcareous shales (No. 3) of the Protolenus Zone at Manuel's, Conception Bay.

On comparison with Shaler and Foerste's species above named it will be seen that this has the same size and general form; the extensions of the dorsal suture approximate to those of that species, they do not go outward, however, but downward, hence it seems possible that the Attleboro' examples have been flattened; allowing for this the chief difference in the Newfoundland form is the pear-shaped ocular fillet, the very prominent eye-lobes, the short posterior extension of the dorsal suture, and the forward curve of the posterior marginal fold.

I think the features of the head-shield in both these forms ally them to Strenuella rather than to Ptychoparia of which no true representatives are known lower down than the Paradoxides beds; for although the eye-lobe is short it is continuous to the posterior marginal furrow, and so there is no corner of the fixed cheek projecting behind the eye-lobe.

We do not suppose this small head to be the larva of *S. strenua*, because it has the features of a mature shield, *e. g.* the short prominent eye-lobe and the short conical glabella. It is not Walcott's var. *nasuta*

of *strenua*, because it has a wide fore-limb to the cheeks, a smaller glabella, and a weaker occipital ring. It is undoubtedly nearer to Shaler and Foerste's *P. Attleborensis*, than to any other described species.

MICMACCA WALCOTTI, n. sp. (Pl. IV., fig. 5*a* to *d*.)

Solenopleura bombifrons (Matt.) Walc., Fauna of Olenellus Zone, p. 686.

This species is of common occurrence among those of the shale above the conglomerate at Manuel's. Mr. Walcott has figured it on Pl. xcviii., fig. 5, 5*a* and *b* of his Olenellus Fauna. He has referred it to my *Solenopleura* (?) *bombifrons*, stating that it is the adult form of that species. A comparison of the two, however, will show that there are several objections to this view. The eye-lobe of *S.* (?) *bombifrons* is not continuous as is that of *M. Walcotti* and is also shorter. This is a very unusual condition of development in a trilobite, I know of no instance of the lengthening of the eye-lobe during growth, but many in which it becomes shorter. The posterior margin of *S.* (?) *bombifrons* differs in the absence of interocular spines ; and the posterior extension of the suture runs outward, much further than in *M. Walcotti.*

The actual larval heads of this species have narrower glabellas than the adult and more distinct glabellar furrows, and the eye-lobes are continuous to the posterior furrow.

The following are the specific characters of *M. Walcotti :* Head-shield sub-semicircular, and strongly arched. Middle-piece sub-quadrate. Front margin with distinct fold. Glabella prominent, reaching almost or quite to the fold, cylindrical, broadly rounded in front, marked by two shallow indistinct furrows, furrows directed backward, the anterior often not traceable ; width of glabella about three-fifths of its length. Occipital ring wide, divided from the glabella by a shallow furrow, which is most distinct in the outer third ; the ring carries a spine which is as long as half of the width of the glabella. The fixed cheek lies much below the level of the glabella, is moderately arched, and with the eye-lobe is two thirds of the width of the glabella. The ocular fillet is prominent, and with the eye-lobe forms a continuous ridge from the glabella to the posterior marginal furrow. The posterior marginal furrow is strong and widens greatly in going outward ; the posterior marginal fold is sharply upturned, geniculated in the middle, and near the dorsal suture bears an interocular spine, directed backward. The dorsal suture scarcely arches outward either before or behind the eye-lobe.

The movable cheek is moderately arched on the outside, and bears a spine about as long as two-thirds of its length from the front to the posterior border ; the area and fold are of about equal width, and the former, opposite the eye-lobe, is bent upward at a right angle to the latter.

The joints of the thorax are strongly arched; the ring bears a short, stout median spine, and the pleuræ are geniculated in the middle; some have a weak spine on the posterior margin at the geniculation. Both the pleura and the ring have a deep groove along the middle, the one on the pleura tapering gradually (as does the pleura itself) outward. The pleuræ are bluntly pointed.

The pygidium found with this species is small and transversely lenticular; the rachis is wide and large and has two joints; these are indicated by a pair of short furrows on the outer third; the furrow dividing off the half-ring at the front of the rachis is wide and rather deep. The side lobes have an elevated lobe at the outer edge which terminates behind in a short spine, directed backward.

Sculpture.—This consists of tubercles, which are most distinct on the glabella and prominent parts of the shield; the outer half of the anterior and lateral margins has distinct, anastomosing raised lines.

Size.—Head-shield. Length exclusive of the occipital spine, 15 mm. Width of the middle piece at the front, 14 mm.; at the eye-lobe, 18 mm.; at the posterior angle, 14 mm. Movable cheek, length including the spine, 20 mm.; width, 6 mm. Pygidium, width, 6 mm.; length, 3½ mm.

Horizon and locality.—Common in the shale (No. 3) above the basal conglomerate (Protolenus Zone.)

This species comes near *M. van Ingeni* of the St. John Basin, but is smaller and has wider fixed cheeks; it also has shorter eye-lobes, and the glabella approaches closer to the anterior marginal fold.

The interocular spine is not conspicuous, and might be overlooked, but it is found on all head-shields that show the margin perfectly. Ford and Walcott have interpreted it in *Olenellus* (*Ellipsocephala*) *asaphoides* as the point of one of the somites of the head-shield. A corresponding aculeation is found on the pleura and the side lobes of the pygidium in *M. Walcotti*; the one on the pleura, however, is analogous to the geniculation of the posterior margin of the middle piece of the head-shield.

Micmacca angimargo, n. sp. (Pl. IV., fig. 6.)

A smaller species than the preceding. Only the middle piece of the head-shield is known. It is strongly arched down at the sides. Anterior margin broadly arched, narrow and upturned. Glabella, broad, cylindrical, considerably raised above the cheeks; only the posterior pair of furrows are seen, and they only towards the margin. The occipital furrow and the dorsal furrows are deeply and sharply cut, and the occipital ring narrow and upturned. The fixed cheeks are wide in front, and bear a distinct ocular fillet, the eye-lobes are shortened, not reaching back to the middle third of the glabella; it is about as long as half of the width of the glabella; the cheek extends somewhat behind the eye-

lobe to a narrow posterior furrow and fold. The furrow runs forward toward the eye-lobe, but a small corner of the fixed cheek separates them, hence the furrow is not quite continuous, it is more so than it appears to be when looked at from above.

Size.—Length of the head-shield, 8 mm. Width of the middle piece, 10 mm.

Locality and horizon.—With the preceding. Rare.

This species, in its narrow upturned margin, recalls *M. recurva* of the Protolenus Fauna in New Brunswick, but its fixed cheek is proportionately wider, its eye-lobe shorter, and its glabella has a much higher relief.

M. angimargo is much nearer to *Solenopleura* (?) *bombifrons* than *M. Walcotti* is; nevertheless there are differences in the wider front and narrower posterior measurement of the first; its flatter cheek, shallower dorsal furrow and narrow occipital ring also separate it. But with *M. angimargo* in the genus Micmacca, it is more difficult to separate *S.* (?) *bombifrons* from it. This last also occurs in the gray calcareous shales (No. 3) at Manuel's, where it is half as long again as the type of the species from the Brigus limestone.

There is quite a strong general resemblance between this species and the fossil from Parkers Quarry, Vt., which Mr. Walcott has referred to Billings, *Bathyurus senectus*,[1] as *Protypus senectus*, but it has a much weaker occipital ring and posterior marginal fold than the Parker's Quarry species. It differs much more widely from Whitfield's *Angelina Hitchcocki*, which is Walcott's type of the genus Protypus.

AVALONIA, Walcott.

AVALONIA PLANA, n. sp. (Pl. IV., fig. 7.)

Only the middle piece of the head-shield is known. This is uniformly convex, both laterally and lengthwise, the arch being about a quarter of a circle and strongest in front.

The front marginal fold is distinct, and there is no area in front of the glabella, but a sharp furrow extends from its front to the dorsal suture just under the eye-lobe; the marginal fold is three times as wide here as in front of the glabella.

The glabella is flattened-cylindrical, slightly widened in front and behind, and has a small projecting angle, opposite the strong intra-ocular groove; there are three pairs of furrows, extending one-third across the glabella, of these the anterior is quite faint, but the two

[1] It is not like the examples of Billings (the supposed types of this species) in the Museum of the Geological Survey at Ottawa, which should rather be classed with Bathyuriscus, Meek.

posterior sharply indented; these furrows are equally spaced, and the space from the third furrow to the front of the glabella is equal to the space between two of the furrows; in the middle of this space a fourth furrow is indicated by a slight emargination of the glabella in front of the ocular fillet.

The occipital ring is lenticular in form with a tubercle on the axial line, and the furrow dividing it from the glabella is deep and extends all across.

The fixed cheeks are triangular, and the sigmoid intra-ocular groove extends half way to the posterior margin, where it terminates at the dorsal suture, it cuts off an anterior quarter of the fixed cheek; the eye-lobe is quite short and is opposite the anterior groove of the glabella.

The posterior marginal fold is straight but curves forward at the extremity, and the furrow is sharply cut.

The extension of the dorsal suture behind the eye is longer than the eye-lobe and the anterior extension of the suture combined.

Sculpture.—As the fossil is a cast of the test, the surface markings are not preserved.

Size.—Length of the head-shield, 8 mm.; width of the middle piece of the head, at the anterior end of the dorsal suture and at the eye-lobe, 9 mm.; at the posterior end of the suture, 14 mm.

Horizon and locality.—As the preceding.

There are many features in this head-shield that recall the Olenidæ of the Upper Cambrian.

This species is near *A. manuelensis*, Walc., but differs in the course of the anterior marginal furrow, and in the position of the glabellar furrows. In Walcott's species the glabella is divided into four nearly equal lobes, in this species the anterior lobe is twice as wide as the others. Walcott describes his species as having long eye-lobes like Anopolinus, in this species the eye-lobes are short.

Having studied this species of Avalonia, I am now of the opinion that the species of the Protolenus Fauna in New Brunswick assigned to Avalonia should be referred to subgen. Bergeronia of Protolenus as being near *B. articephala.*

PROTOLENUS.

Protolenus Howleyi, Walc. sp. ? [1]

Solenopleura (?) *Howleyi*, Walcott ? Olenellus Zone, p. 657, pl. xcvii., fig. 7 and 7*a*.

In the shaly layers associated with the first limestone conglomerate, near Foster's Point, one meets occasionally with a Protolenus which appears to be closely related to the form which Mr. Walcott has described

[1] The printer of the Olenellus Fauna has made a mistake in the reference of the plate xcii. and has placed the name "Harveyi" where Howleyi ought to be, this appears from the description of the species in the text.

as *Solenopleura* (?) *Howleyi ;* the specimens show that the species is intermediate between *P. elegans* and *P. paradoxoides*, but nearer the latter. It has a shorter eye-lobe than either of these species, and it has a sharply geniculated—almost mucronate—posterior marginal fold. It has the tubercle at the root of the ocular fillet which appears in *P. elegans* and is a more distinct feature in *P. paradoxoides*. Neither of these characters are assigned to *P. Howleyi*. Though Mr. Walcott speaks of only three furrows on the glabella his figure appears to indicate a fourth ; it is evident that four furrows are present in the Smith Sound species.

The free cheek which occurs with this species is similar to that of *P. paradoxoides*, but has a shorter spine.

From the above description it will be seen that this species is closely related to *P. paradoxoides*, but we hesitate to assume its identity with the New Brunswick species, as there are differences, and it may be found to agree with Walcott's species when the two are better known.

METADOXIDES, Bornemann.

In 1888 Meneghini described trilobites which had been discovered in Sardinia, and of which he had only the thoraces, under the genus Paradoxides,[1] but which are different from the types of that genus as known in the north and west of Europe. Subsequently, J. G. Bornemann redescribed these fossils under a new generic name, *Metadoxides*.[2] Bornemann found a decided difference between this genus and Paradoxides in the form of the glabella ; this part of the head-shield in the latter genus is club-shaped, whereas in Metadoxides it is conical. Now, as the glabella is the most important part of the head-shield, and a part which exhibits prospectively in the larval form, its shape in the adult, it is important in generic classification, and it appears to me that Bornemann was quite right in dividing off his genus from Parodoxides.

METADOXIDES MAGNIFICUS. (Pl. VIII., figs, 1*a* to *e*.)

Metadoxides magnificus, Matt., Bull. Nat. Hist. Soc. N. Brunswick, No. xvii., p. 137, pl. iii., 1898.

A large species with wide, semicircular head-shield and long genal spines. Middle-piece of the head subquadrate. Front broadly arched ; anterior marginal fold flat, and scarcely distinguished from the front area of the cheeks (in the flattened tests) ; the two together in front, nearly half as wide as the glabella, both widen on each side of the glabella, so that at the facial suture they are as wide as three-quarters of the width

[1] "Fauna Cambriana-Trilobiti," Memoirs Geolog. Commis. Italy, vol. iii., pt. 2nd.

[2] Die Versteinerungen des Cambrischen Schichtensystems der Insel Sardinien, von Dr. Joh. Georg Bornemann, Halle, 1891.

of the glabella, the marginal fold being the wider of the two. Glabella conical, bluntly pointed in the anterior quarter. The glabella and occipital ring together are about as long as half of the space between the facial sutures in front. The glabella has three pairs of furrows plainly shown, and a fourth pair faintly indicated. The furrows do not connect across the axis. The occipital furrow and ring are not well preserved in the specimens known, but the furrow appears to extend quite across the back of the glabella. The fixed cheek is broad and flat, with a strongly arched eye-lobe, about halfway between the side of the glabella and the edge of the head-shield.

The movable cheek is wide and strongly arched in the anterior part, becoming straighter behind. The area is about half of the width of the marginal fold in front, but less than that at the eye-lobe. The posterior margin is sinuate, having a strong sinus near the genal spine ; and the furrow and fold are broad and weak. The genal spine is narrow, and more than twice as long as the movable cheek. The facial suture along the eye-lobe is somewhat shorter ? than behind it, and not quite so long as the anterior extension of the suture. This goes forward from the eyes with a sigmoid curve, to the nearest part of the anterior margin. The posterior extension of the suture is obscure in all the specimens obtained, but a detached free cheek appears to indicate that it was nearly direct to the posterior margin.

Only detached segments of the thorax are known ; they have a narrow rachis (compared with the width of the head) and short pleura ; the latter is traversed by a strong furrow, which in some (the anterior) runs along the centre of the pleura, but in others begins toward the front side, and is more oblique ; the pleura are bluntly pointed.

The number of segments is not known, but it may be assumed that they were numerous. In some pleuræ the ring has a tubercle or fractured base of a spine, on the posterior edge; it is supposed that there was a slender axial spine at the back edge of each thoracic ring, as such spines are found on the joints of the pygidium.

The pygidium is elongate semi-circular with a rather flat axis extending two-thirds of its length ; three joints are present in the axis, of which the middle one bears a slender spine at the back; an appressed spine, which extends across the anterior joint, appears to belong to the posterior joint of the thorax. The side lobes are convex, and are of nearly equal width, except at the back. The margin is entire, except that it is notched behind at the axial line.

Fragments of the hypostome have been found, but are not sufficient for description.

Sculpture.—The surface of the marginal fold of the movable cheek is marked by widely spread, anastomosing, raised lines ; along the front margin of the shield, close to the edge, a few of these lines appear, but

are closely crowded, both on the free cheek, and on the middle piece of the head-shield; along the genal spine the raised lines run diagonally downward from the outer to the inner margin; along the posterior border of the head-shield there are crowded raised lines, as along the anterior border. On the doubleur the lines are crowded and more distinct. The edges of the ring of the rachis show similar crowded wrinkles; on some pleuræ there is a narrow band, or transverse wrinkling on each side of the pleural groove; in others the wrinkled band covers the whole under surface, and the wrinkles or raised lines become gradually drawn out in V-shaped lines along the pleura, so that towards its extremity they become parallel to the axis of the pleura. On the pygidium there are raised lines, but finer and more crowded, and parallel to the posterior border.

Size.—Length of the middle piece of the head about 70 mm. Width in front 110 mm.; at the eye-lobe 95 mm.; at the posterior angle about 90 mm. Length of the cord of the anterior extension of the facial suture 25 mm.; of the eye-lobe 17 mm.; of the posterior extension about 20 mm. Length of glabella and occipital ring about 55 mm.; width at third furrow 25 mm.; at the first furrow 32 mm. Length of movable cheek 60 mm.; and with genal spine about 175 mm.; width at the front 25 mm.; at the back of the eye-lobe 37 mm.; at the posterior margin about 35 mm. Length of the pygidium about 20 mm.; width 27 mm.

Horizon and locality.—Occurs in a very fine, greenish-gray shale, resting on volcanic ash rock, seen in a railway cutting at Manuel's Station, Conception Bay, Newfoundland. What appears to be the original surface of the ash rock in Cambrian time was uneven, and the fine mud of the shale settled into the inequalities of the surface. Almost directly upon the old rock surface, there is a layer of a few inches of shale abounding with the detached parts of this trilobite; the tests are confusedly crowded together, flattened and somewhat distorted in the shale, and are accompanied by *Hyolithes Hathewayi.*

On comparison with Mr. Walcott's section on Manuel's Brook, (a short distance to the north)[1] I find no volcanic rock mentioned, hence I suppose the rock on which the bed of shale rests that contains *M. magnificus*, belongs to the older Intermediate, or Huronian system. To the east of the ash rock are Nos. 3 and 4 of Mr. Walcott's section, hence it is presumed that No. 5 corresponds in position to the volcanic ridge, as a shore deposit, and that the bed of shale with *M. magnificus* will be at the bottom or near the bottom of No. 6 of Walcott's section. Here, it is stated, the head of an Olenellus was found.

This fine species shows many points of resemblance in a general way to *Holmia Bröggeri*, Walc., but there can be no doubt it is distinct, if only by the fact that it has movable cheeks. The genal spines and

[1] U. S. Geol. Surv. Bull. 81, pp. 260, 261.

pygidium differ also from those ascribed to that species by Walcott. It differs from all the Paradoxides in its conical glabella, as well as in the details of the ornamentation of the surface. *Solenopleura* (?) *Harveyi*, Walcott, resembles the species in some respects, but is much smaller, and belongs to a lower horizon (No. 2) of Walcott's section.

In this species we have a good example of the Sardinian genus Metadoxides, and apparently the most primitive example of the genus known. *M. torosus*, Menegh., has just such a thorax and pygidium, but has evidence of more advanced development in the head-shield; this is chiefly in the shorter eye-lobe, closer to the glabella, the more spreading course of the posterior extension of the dorsal suture, and the condensation of the head in front of the glabella. The meaning of these differences is apparent when we study the development of Paradoxides. *P. Acadicus*, for instance, shows a much wider extension of the marginal area of the head-shield in the larval, than in the adult stage. The withdrawal of the eye-lobe from the vicinity of the margin toward the glabella, is seen to be one of the progressive changes that occurred during the growth of the Ptychoparinæ of the Paradoxides Beds at St. John. The short posterior extension of the dorsal suture is an almost universal characteristic of the trilobites of the Protolenus Fauna. Here, then, are three criteria from which we may infer the Newfoundland species to be an older (or at least a more primitive) type of Metadoxides than those of Sardinia.

Another species of Sardinian Metadoxides (*M. Bornemanni*) does not show such primitive characters as *M. torosus*, for not only is the whole head more compact, but the condensed pygidium with its costate side lobes, introduces a feature, quite at variance with the usual appearance of the pygidium in Paradoxides, and more like that in Conocoryphe; if this species may be retained with *M. torosus* in Metadoxides, there is greater reason for referring to this genus the new species from Newfoundland.

Quotation from Bulletin No. xvii., 1899, of the Natural History Society of New Brunswick, in reference to Metadoxides.

Since writing the above, it has seemed to the author desirable to make a broader distinction between the Sardinian and American species of Metadoxides than that given above. He has heretofore depended upon the view of the Sardinian succession given by Barrande and Meneghini, from which one may infer the presence of two Cambrian faunas in Sardinia, the lower containing Olenopsis, Metadoxides, Paradoxides, etc., and the upper Giordanella (Asaphus, Menegh.) Nesecuretus, etc.

Bornemann, however, seems to throw doubt upon the entire separateness of these faunas, when he says that remains of *Giordanella* are found with *Metadoxides armatus*.[1] If this is the case it will carry the

[1] Versteinerungen des cambrischen Schichtensystem der Insel Sardinien, p. 465, Halle, 1891.

Sardinian Cambrian fauna, as a whole, to a higher plane, and imply the separation of these by a wider space of time from the Newfoundland species described above. We think however there are two faunas, with possibly sub-faunas included.

Meneghini's view would admit of the following arrangement of the Sardinian as compared with the Atlantic North American Cambrian faunas :

	ATLANTIC NORTH AMERICA.	SARDINIA.
Upper Cambrian.	Dictyonema Fauna. Peltura Fauna. Olenus Fauna.	Giordanella Fauna. Olenopsis Fauna.
Lower Cambrian.	Paradoxides Fauna. The Newfoundland Metadoxides. Protolenus Fauna.	

In this view the lower fauna of Sardinia might be regarded as intermediate homotaxically, between the Paradoxides and Olenus faunas. It is therefore desirable to emphasize the points in which the Newfoundland species differs from the later, and supposed derived forms of Metadoxides, found in Sardinia, and apply to them sub-generic names, beginning with the most primitive.

1. Species having a widely expanded front to the cephalic shield; somewhat prolonged eye-lobes; short posterior extension of the dorsal suture. No costæ on the side lobes of the pygidium. CATADOXIDES n. subgen. Example *C. magnificus.*

2. Species having a compacted front to the cephalic shield, short eye-lobes, prolonged posterior extension of the dorsal suture.

a. No costæ on the side lobes of the pygidium. METADOXIDES, sens. strict.—Ex. *M. torosus.*

b. One or more pairs of costæ on the side lobes of the pygidium. ANADOXIDES n. subgen. Ex. *A. armatus, A. Bornemanni* (*A. arenosus ?*)

CONOCORYPHINÆ.[1]

Zittel placed this group under Salter's family Conocephalidæ, which is described as having eyes, and therein retains it under Barrande's heterogeneous genus Conocephalites, which the latter author described as having eyes in the middle of the cheeks, or sometimes having no eyes. The presence or absence of eyes indicating as it does a radical difference of habit and function, is quite overlooked in thus associating together widely diverse species. The absence of the eyes seems to the author sufficient cause without any other to separate this group from Conocephalidæ.

It is more in accordance with its natural relations to place this group of species under Angelin's family Arraphidæ based upon the genera Arraphus[2] Harpes, Harpides, etc. ; for to these it is more distinctly

[1] See Trans. Roy. Soc. Can., vol. ii., p. 102, vol. iv., p. 149, vol. v., pp. 121, 163.

[2] Arraphus is suspiciously like a Harpes which has been deprived of the flattened margin, and thus seems an unfortunate choice as the type of a family.

related than to the miscellany of genera associated under Conocephalidæ. It is true that many of the species of the Arraphidæ are represented as having eyes, but some of these so-called eyes are of a doubtful nature, and in general aspect the Conocoryphinæ are nearer to this family than to the other.

The following classification will show the relations of the principal species of the Conocoryphinæ, the European species in each group being named first :

1.—Species in which the facial suture cuts off a narrow strip of the cheek, Pygidium of several joints (about 4) CONOCORYPHE, Corda. This group appears at the base of the Paradoxides Zone; its realm is the Lower Paradoxides Beds.

C. Sulzeri, Corda,[1] *C. emarginata*, Linrs. *C. tenuisulcata*, Linrs. *C. impressa*, Linrs. *C. equalis*, Linrs. *C. Levyi*, Berg. *C. Heberti*, Berg.[2] *C. Baileyi*, Hartt. *C. Walcotti*, Matt. *C. Dalmani*, Ang. *C. Bufo*, Hicks. *C. elegans*, Hartt.[3]

2.—Species with small glabella, tubercle in front of the glabella, suture along the rim. Pygidium short (of two or three joints). CTENOCEPHALUS, Corda. Appears at the base of the Paradoxides Zone. Range same as the preceding.

C. coronata, Barr. *C. exsulens*, Linrs. *C. Solvensis*, Hicks. *C. Matthewi*, Hartt. *Elyx laticeps*, Ang.[4]

3.—Species with small glabella, wide cheeks, suture around the rim. Pygidium 4-5 joints.

ERINNYS, Salter. Appears in the Middle Paradoxides Beds.

E. venulosus, Salt. *Elyx latilimbatus*, Brög. ? *Elyx breviceps*, Ang. *Carausia Menevensis*, Hicks ?

4.—Species with shortened ocular crest near the front margin, suture cutting off a narrow strip of the cheek. Pygidium small (two to three joints.).[5] ATOPS, Emmons. Middle Paradoxides Beds ?

A. trilineatus, Emm. *C. reticulatus*, Walc.[6]

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[1] The description of *C. Sulzeri* implies that the suture is along the rim (hence it was separated from the others in my former classification). Trans. Roy. Soc. Can., vol. ii., p. 103. I have since examined actual specimens and find the suture divides off a narrow piece of the cheek.

[2] Bergeron states that the suture is not visible in either of these species.

[3] The last three species form a section distinguished by an angular enlargement of the anterior marginal rim.

[4] This species appears to be a distorted and mutilate Ctenocephalus, but neither the figure of the head nor that of the pygidium, agrees with the description ; they should have been "*ab auctore rejecta.*"

[5] Emmons says the pygidium of *A. trilineatus* has only one, or at most two rings. Walcott figures three faint rings.

[6] The pygidium of this species is not known.

5.—Dwarf species with large glabella, and apical spine to the front margin, suture within the rim. CAINATOPS. Upper Paradoxides Beds.

C. pustulosus, Matt.[1]

ATOPS, sub-gen.

as a genus by Emmons, 1844.

ATOPS TRILINEATUS, Emmons. (Pl. IV., fig. 8.)

Atops trilineatus, Emmons, Taconic Syst., p. 20, fig. 1, pl. ii, fig. 3.
Calymene Beckii, Hall, 1847, Pal. N.Y., vol. 1, p. 252, pl. lxvii., figs. 4*a-e*.
Atops trilineatus, Haldeman, 1848, Am. Jour. Sci., 2nd Ser., vol. v., p. 107.
Atops punctatus, Emmons, 1859, Manual of Geol., p. 88, fig. 71.
Atops trilineatus, Barrande, 1861, Bull. Soc. Geol. de France, 2nd Ser., t. xviii., p. 269, pl. v., fig. 1.
Atops punctatus, Barr. 1861, Ibid, p. 271, pl. v., fig. 3.
Conocephalus (Atops) trilineatus, Ford, 1871, Am. Jour. Sci., 3rd Ser., vol. ii., p. 33.
Conocephalites trilineatus, Ford, 1873, Ibid, 3rd Ser., vol. vi., p. 135.
Triarthrus trilineatus, Miller, 1877, Cat. Am. Pal. Foss., p. 223.
Calymene Beckii, Walc., 1879, Trans. Alb. Inst., vol. x., p. 23.
Conocoryphe, Ford, 1880, Am. Jour. Sci., 3rd Ser., vol. xix., p. 153.
Ptychoparia trilineata, Walcott, 1886, U.S. Geol. Surv. Bull. 30, p. 203, pl. xxvii., figs. 1, 1*a-c*.
Conocoryphe trilineata, Walcott, 1887, Am. Jour. Sci., vol. xxxiv., p. 187, figs. 7, 7*b*.

The above record will show how this species has been bandied about from one genus to another, until it has found a resting place in Conocoryphe. Whether it shall remain there or not, only the future can tell, but Atops has a strong claim. It was S. W. Ford who first appreciated its relation to the European genus Conocoryphe.

Through the favour of Mr. J. P. Howley, the author has received an example of the above species, obtained from the shales at Manuel's Brook. As it shows some features of the species that have not been described it is noticed in the following paragraphs.

It may be premised that the fossil is a cast of the interior surface, and shows the cephalic shield and ten joints of the thorax. The fossil is flattened and slightly distorted.

For a better understanding of the points at issue, Emmons's description of the species is quoted. " Crust granulated, cephalic shield semicircular with its anterior and lateral edges turned upwards ; posterior angles rounded, facial suture beginning at the outer angle of the cephalic shield and runs nearly parallel with the anterior margin to the middle lobe, when it turns at a right angle and runs parallel with that lobe ; eyes undistinguishable, body composed of seventeen or eighteen rings, narrowing very gradually to the caudal extremity ; pygidium a flat expansion

[1] Trans. Roy. Soc. Can., 2nd Ser., vol. iii., sec. iv., p. 174, pl. i., fig. 8.

of the crust, and is provided with a single ring ; axis narrower than the lateral lobes, rings seventeen, each of which is separated by a groove about as wide as the rings.

"Axis armed by a row of sharp spines ; lateral lobes provided with a row of tubercles or prominences along the median line ; margins of the rib-groove run parallel as far as the tubercle, then they diverge ; tubercles become obsolete toward the tail ; caudal shield very small, provided with one or at most two rings."

Emmons's statement of the course of the facial suture, would conform to the course of that seam in Ptychoparia, but not in Conocoryphe, and Walcott distinctly says that the course of the suture in the first type specimen is that of Ptychoparia ;[1] but there must be some confusion here, for neither in the first nor second type figured by Walcott is any such suture shown.[2]

The suture in Emmons's species as in Conocoryphe, sens. strict., cuts off a portion of the depressed part, or marginal furrow of the cheek. The anterior end of the sutures cuts the frontal limb of the shield into three equal parts (exclusive of the genal spines). The anterior part of the limb between the sutures is sharply upturned and nearly straight across.

The genal spine is quite short, and not quite terminal because the posterior margin of the cheek turns forward toward the outer angle.

Emmons states that the axis of the thorax is narrower than the pleuræ, this holds for the posterior pleuræ, but the middle are as wide as the axis and the anterior are shorter than it.

The geniculation of the pleuræ to which Emmons refers as a row of tubercles, is nearer the distal end in the anterior pleuræ, but nearer the rachis in the others. The anterior pleuræ are obtusely pointed, but the others bear short points directed backward.

Though Emmons figured the ocular crest he appears not to have noticed it in his description. It differs from that of other sections of the genus Conocoryphe in being set far forward, greatly shortened, and more prominent than usual ; from its rough almost tuberculated summit, several strong ridges descend the anterior slope toward the front margin.

The Newfoundland specimen does not show the sharp genal spine directed backward, which Walcott delineates, but a short blunt point directed outward. They are more like those of the young example figured by that author.[3]

Sculpture.—The surface ornamentation is as described by Emmons, the tubercles being largest and most prominent on the glabella and the rachis of the thorax.

Size.—Length of the head-shield 14 mm., width 32 mm. Length of the movable cheek, including the genal spine 16 mm. ; width in the

[1] U.S. Geol. Surv., Bull. 30, p. 204.
[2] Ibid. pl. xxvii, figs. 1 and 1c.
[3] Olenellus Fauna, pl. xcv., figs. 5*b*.

middle 3 mm. The length and width of the glabella are equal (10 mm.). Length of the ten joints of the thorax 23 mm., width at the middle 30 mm.

Horizon and Locality.—Mr. Howley was unable to indicate the exact horizon of this specimen. The matrix is a greenish gray fine shale, similar to that which at that locality (Manuel's Brook) holds fossils of the *P. Davidis* subzone of the Paradoxides Beds, where probably it belongs.

ERINNYS, Salter, 1872.

ERINNYS BREVICEPS, Ang. (Pl. IV., fig. 9.)

Harpides breviceps, Ang., 1854, Palæont. Scand., p. 87, pl. xli., fig. 8.
Erinnys venulosa, Salt., Hicks., Quart. Jour. Geol. Soc., vol. 28, 1872, p. 178, pl. vi., figs. 1 to 6.
cf. *Carausia menevensis*, Hicks., Quart. Jour. Geol. Soc., vol. 28, 1872, p. 178, pl. vi., fig. 7.
Harpides breviceps, Ang., Linrs., Die Underparadoxoideslagren vid Andrarum, 1883, p. 27, tab. iv., figs. 16 *a*, *b*.

This notable species of Angelin shows its close relation to Conocoryphe in many ways, and from the observations which follow, it will be seen that it is no more than a sub-genus of that genus.

The other species referred to Harpides occur in the base of the Ordovician, and are claimed to have eye-lobes or eyes, of which we can find no trace in this species, nor are they shown either by Angelin or Linnarsson for the examples found in Sweden ; this appears to be an important distinction, and if eyes are actually found in the Ordovician species, the generic distinction between Harpides and Erinnys must be maintained.

It is true that the supposed eyes of the Ordovician species are in an anomalous position, being *before* in place of behind the ocular fillet ; still such acute observers as Barrande and Beyrich have asserted that these prominences have the office of visual organs.

Angelin's description as usual, is exceedingly brief, viz., *Harpides capite brevi, canaliculo lato intramarginali.* Of course the "Harpides" refers us to the generic characters of Beyrich's genus, and we have Angelin's figures to help to an understanding of the form, but without Linnarsson's careful and extended diagnosis of the species, we would be in doubt as to whether the Newfoundland fossil was of the same species, or not.

Linnarsson's observations and descriptions were based on the typical material preserved in the Royal Museum at Stockholm, and his diagnosis is as follows :—

"Head-shield semicircular (without a margin ?) twice as wide as long, having the exterior part bent back into angles scarcely at all extended. Glabella small, occupying less than half of the head [exclusive

of the neck ring—G. F. M.], three lateral furrows on each side, of which the posterior greatly exceed the anterior in size. Occipital furrow strongly bent forward in the middle. Inner cheek with reticulate markings, outer cheek ornamented with small radiating striæ and scattered tubercles."

Linnarsson adds that "the basal lobes of the glabella are almost surrounded by furrows, owing to the backward turn of the posterior furrow, and the forward bend of the occipital furrow; he also says that the glabella is somewhat drawn in in front of the basal furrows, and further forward is of more equal breadth. The occipital ring is considerably widened in the middle, owing to the forward bend of the furrow, above referred to: the furrow is quite shallow in the middle, but deeper toward the sides. The cheeks are more than twice as wide as the glabella; the inner part is gently convex, to this succeeds a gently concave belt, whose circumference is bent backward, not (so far as one can judge from the accessible examples) forming any elevated edge. The ornamentation of the inner part of the cheeks consists of a fine network of raised lines. Near the dorsal furrow there is, as with the blind Conocoryphes, a tubercle from which runs out a somewhat coarse elevated line. From this line proceeds in a radiating manner, especially forward, close, fine, irregular elevated lines. Elsewhere the cheek is sparsely sprinkled with small tubercles, which seem to be regularly arranged toward the margin where they form a regular row. No ornamentation of the glabella can be distinguished on examples preserved in slate, but on those in the Andrarum limestone, the surface shows a very fine granulation, and scattered tubercles, finer than those on the cheeks."

"The above description departs considerably from Angelin's figure of *Harpides breviceps*. This shows a very convex head-shield, with the inner part of the cheek strongly elevated, and sharply marked off from the other part. The elevated part which may be compared to a cornucopia is marked by a depression in front of the glabella. The tubercles which have their place beside the dorsal furrow lie in depressions. A part of the original examples preserved in the Royal Museum agree in this respect nearly with the figure. Others again by transitional forms, connect with much less convex examples, and serve to show that the aforesaid turgidity is the cheek's inner part only gently arched, and it passes by degrees into the outer concave part. In front of the glabella one finds in these examples only an indication of a depression, which also is a sinking beside the dorsal furrow that is quite insignificant. Examples preserved in slate are in all respects near to the above, and therefore I do not hesitate to refer them to Angelin's species."

"With the exception of *H. breviceps*, all the hitherto (1882) described species belong to the base of the Lower Silurian System. *H. rugosus*, Sars and Beck, occur in the Ceratopyge limestone [=Tremadoc] *H. Grim-*

mi, Barr, in the Bohemian Etage D. d, 1, and all the American species in the Quebec Group [=Arenig] *H. hospes*, Beyr. (found loose) is referred to the basal limestone of the Lower Silurian. . . . *H. hospes*, *H. Grimmi* and *H. rugosus* have, off from the glabella, a rounded elevation which Beyrich and Barrande regard as an eye, which as in Harpes connects by a fillet with the dorsal furrow. In *H. breviceps* one finds corresponding to this an oval tubercle immediately beside the dorsal furrow, situated just as in the typical species, of the genus Conocoryphe ; Barrande is inclined to think this tubercle an eye. Whether this difference in position of the supposed eye should be thought of generic significance is for the present difficult to decide. I think that in any case it is best to preserve Angelin's generic name. Without giving any sufficient ground Barrande refers *H. breviceps* to Conocoryphe (Conocephalites). Especially do I think it best to retain Harpides because of the absence of a marginal rim and because of the raised circumference of the head-shield in *H. breviceps*."

"The English species *Erinnys venulosa*, Salt., seems to be very like this ; it occurs in the Middle Menevian at St. David's ; according to the figures it has a narrower head and larger glabella. The most important difference is that in *E. venulosa*, the head-shield is bordered all around [by a marginal fold]. In *H. breviceps* the head-shield is edged only behind, the front edge is devoid of any trace of marginal furrow and fold. *E. venulosa* in the figures shows a distinctly elevated edge, bounded within by a plain furrow ; for me this difference plainly distinguishes *H. breviceps* from Erinnys. Salter thinks that the species of Harpides described by Angelin belong to Erinnys, but he is quite mistaken in regard to *H. rugosus*."

"Perhaps the semicircular thin edge which forms the extreme boundary of the head-shield is not the actual margin of the head. Rather may one think that beyond this edge runs a suture which separates a small movable cheek analogous to those of the genus Conocoryphe. It seems not improbable also that Erinnys has a similar free-cheek, and that *Carausia Menevensis*, Hicks, is no other than an Erinnys that has retained them."

"This species occurs occasionally in the slate with *Conocoryphe æqualis*, in which Hr. v. Schmalensee found two examples.[1] Less rare at Andrarum though even there not by any means common."

In the figure accompanying Linnarsson's very complete description of the head of this species given above, the median ocular (?) crest of the cheek is represented as having several strong branches, this appearance is foreign to Conocoryphe, Ctenocephalus, Erinnys and Carausia, and we think is an error of the artist ; therefore we do not see anything in this to separate the Newfoundland species from *H. breviceps*.

[1] The slate with *C. æqualis* comes immediately below that with *Paradoxides Davidis* at Andrarum.—G. F. M.

The specimen from Manuel's Brook makes it clear that Linnarsson's surmise as to a missing free-cheek in that species is well taken, and its discovery unites the Swedish, Welsh and American species in one genus, as has been assumed in the references given above. Through *Erinnys venulosa* and the Newfoundland form we obtain a restoration of the complete test except the hypostome. This, if analogous to that of Conocoryphe would have been oval in form, bordered all around and having a horn-like process extending towards the front margin on each side.[1]

The form from Manuel's Brook which we figure is probably of the species *Erinnys venulosa* mentioned by Mr. Walcott as occurring in Zone *b* of No. 7. So far as the middle piece of the head is concerned (the only part described by Angelin and Linnarsson) it quite agrees in size and proportions; but it has also movable cheeks and a portion of the thorax. The dorsal suture, however, does not prove to be that of Conocoryphe as Linnarsson conjectured it might be, but corresponds to that of Ctenocephalus, since no portion of the cheek, except the extreme corner is cut off, and the suture runs around the rim; but in this respect it agrees with Erinnys. The space by which the anterior ends of the cheek are parted, is equal to the length of the head omitting the occipital ring. The genal spines are of about the same length as those figured for *Carausia menevensis*, and there is in front of the glabella (in this flattened example of *E. breviceps*) a slightly raised area, extending and widening towards the dorsal sutures, somewhat similar to that which Dr. Hicks represents in his figure of the former species. If we allow for lateral compression in the Welsh species it will be seen that there is a strong resemblance between the two.

Five joints of the thorax and part of a sixth are preserved. They are strongly geniculated at about one-third from the extremity, beyond which they are flexed backward. The rachis is narrower than the length of the inner part of the pleura, and the outer part of the pleura is wedge-pointed.

Sculpture.—That of the head is as described by Linnarsson; that of the pleuræ consists of fine transversely rugulose striæ, visible with a lens.

Size.—Length of the head, 10 mm. Width across the base (including the movable cheeks), 15 mm. Length of the movable cheeks, 15 mm. Width about 4 mm. Length of a thoracic joint, 25 mm. Width, $1\frac{1}{2}$ mm. Length of the ring, 5 mm.

Horizon and locality.—The Paradoxides Davidis sub-fauna at Manuel's Brook.

Erinnys venulosa, Salt., according to Dr. Hicks has 24 joints in the thorax. The pygidium is "semi-circular and has a tolerably strong axis

[1] Perhaps the cracks at the front of the glabella in Carausia Menevensis (Quart. Jour. Geol. Soc., May, 1872), pl. vi., fig. 7, mark the position of these processes in that species.

composed of four segments ; the lateral lobes are marked by four moderately well defined ribs."

Closely allied to *E. breviceps* is *Carausia Menevensis* of Hicks. According to Dr. Hicks this species may be distinguished from Salter's species above named by "its shorter glabella, smaller number of body segments and shorter spines in the hindermost pleuræ." He found 15 body segments and thinks this nearly the full number. The only specimen he found, and which is figured, is about half of the length of a full sized Erinnys.

IV.—*The Etcheminian Fauna of Smith Sound, Newfoundland.*

By G. F. MATTHEW, D.Sc., LL D.

(Read May 25th, 1899.)

The species described in this article are from the Upper Limestone of the Etcheminian Series at Smith Sound, an inlet of Trinity Bay, Newfoundland (one is from the shale immediately below the limestone) and were collected in the summer of 1898. Special reference to "Horizon and locality" is therefore unnecessary.

The species are mostly new, though a few have been described by the late E. Billings and by Mr. C. D. Walcott, Director of the United States Geological Survey.

BRACHIOPODA.

OBOLELLA, Billings.

Obolella cf. *chromatica*, Bill. (Pl. V., fig. 1.)

cf. *Obolella chromatica*, Bill., Palæoz. Foss., vol. i., p. 7, figs. 7 *a-d*.
Obolella cf. *chromatica*, Bill., Preliminary Notice of the Etcheminian Fauna of Newfoundland, Nat. Hist. Society of New Brunswick, Bull., No. xviii., p. 189, pl. i, fig. 1.

Several imperfect valves of a small Obolella resembling the above species of Billings in size and form were met with in the limestone.

Sculpture.—The surface which is granulated, shows undulations of growth and faint and obscure radiating lines.

KUTORGINA, Billings.

This genus was founded on a Brachiopod with a straight hinge-line from Anse-au-Loup, Labrador, *K. cingulata*. To this Mr. Walcott has added *K. sculptilis*, *K. Whitfieldi*, *K. Labradorica*, *K. pannula* and *K. prospectensis*. As however some of these species have a phosphatic shell, it would seem that they should be transferred to some other genus. Though Billings does not mention the composition of the shell of *K. cingulata*, Mr. Walcott who has collected the shell, has announced that it is calcareous.

Kutorgina granulata (Pl. V., figs. 2*a* to *d*).

Kutorgina granulata, n. sp., Nat. Hist. Soc. N. B., Bull. xviii., p. 189, pl. i., figs. 2 *a-d*.

Shell substance calcareous. Hinge-line straight, somewhat shorter than the full width of the shell; lateral margin straight near the hinge; front margin broadly rounded.

Ventral valve convex, the umbo considerably elevated, the posterior third of the shell somewhat more tumid than the rest; lateral angles somewhat flattened. The area appears to have a deltidium, about one-fifth as wide as the length of the hinge-line;[1] this line, when viewed from behind appears to be bent up in the middle. *Interior.*—On the posterior half there are a number of low vascular ridges; two of these inclose a median groove, which extends to within a third of the front of the valve; there are about three other ridges on each side. These ridges are most distinct near the umbo, and about three or four are found in the space of one millimetre.

The dorsal valve is flatter, and has the umbo depressed to the cardinal line, and the sides of the valve towards the hinge much flattened. *Interior.*—There is a median septum extending about one-third of the length of the valve, and faintly indicated for another third to a point where there is a small pit on the inner surface of the valve; and there are also radiating lines as in the ventral valve, but more numerous.

Sculpture.—The surface is minutely granulated. On the somewhat tumid posterior third of the valve concentric striæ are faintly visible, but they become distinct on the anterior part, and there are very fine radial lines, giving to the summit of the intervening ridgelets a beaded appearance; at certain intervals stronger concentric striæ of growth show on the surface of the shell; there are about five or six of these on its surface.

Size.—Length, 4 mm.; width, 6 mm.; depth of the ventral valve, $1\frac{1}{2}$ mm.

This species is smaller than *K. cingulata* and differs in its ornamentation; it is about the size of *K. pannula*, but that species has a diagonal cancellation; it has considerable resemblance to the Swedish *K. cingulata* var. *pusilla*, Linrs.,[2] but that is said to have a corneous shell. *Iphidea ornatella*[3] which resembles *K. granulata* in shape and size also has a corneous shell.

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[1] One example of a ventral valve, apparently of the same species as this has no deltidium, possibly there are two species.

[2] On the Brachiopoda of the Paradoxides beds of Sweden, G. Linnarsson, Stockholm, 1876, p. 25, pl. iv., figs. 53, 54.

[3] *Ibid.*, p. 25, pl. iii., figs. 42, 43.

GASTEROPODA.

SCENELLA, Billings.

SCENELLA cf. RETICULATA, Bill.

cf. *Scenella reticulata*, Bill., Palæoz. Foss., vol. ii., pt. i., p. 77 (no figure).
Scenella cf. *reticulata*, Bill., Nat. Hist. Soc., Bull. xviii., p. 190.

Some shells which appear to be of this species were observed ; they have campanulate apertures, and are of about the dimensions of Billings's species.

Sculpture.—The radial ornamentation is not properly described by the term striæ ; the radii are actually sharp thread-like ridges, with flat intervals of considerable width between ; these, without break, cross over fine striæ of growth with heavier growth lines at intervals. These heavier concentric lines in connection with the radial lines give the shell the cancellated appearance to which it owes its name.

Size.—The largest individual observed had an aperture 7 x 9 mm. across.

SCENELLA cf. RETUSA, Ford.

cf. *Scenella retusa*, Ford, Am. Jour. Sci., 3 ser., vol. v., p. 213, figs. 2*a*, *b* (p. 214).
Scenella cf. *retusa*, Ford, Nat. Hist. Soc., Bull. xviii., p. 190.

Another species of Scenella appears to agree in most respects with Ford's species, above cited. It is smaller than *S.* cf. *reticulata* and is distinguished by its ornamentation. It possesses the two radiating ridges diverging from the apex, supposed to be characteristic of the species, but the surface characters do not altogether agree with Ford's description, as the radiating lines are more prominent than the concentric.

Sculpture.—The surface is marked by radii broader than those of *S.* cf. *reticulata*, and less prominent. There are fine close striæ of growth, especially around the margin ; and more distant, somewhat irregular concentric undulations of growth ; the two former varieties of sculpture are obscured by a granulation of the surface of the shell, more distinct than that of *S.* cf. *reticulata.*

This species is commoner at Smith Sound than the preceding.

RANDOMIA.

Among the forms common at Smith Sound is one which at first view I referred to the genus Palæacmæa on account of its general form and strong concentric ridges. On further investigation of Palæacmæa I cannot find any species characterized by the strong radiating ridges which in addition to the heavy concentric ridges, this species possesses.

Mr. E. O. Ulrich, who has made a close study of the early Palæozoic Gasteropoda, states that no species of Palæacmæa has radiating lines, but the genus possesses only concentric ridges.[1] This being the case the Newfoundland species will not fall in Palæacmæa. Neither does it belong to any other one of the half a dozen genera of Patelloid Palæozoic molluscs named by Ulrich and Scofield; it seems therefore necessary to give it a separate designation. The name is in allusion to the island on the south side of Smith Sound.

Randomia Auroræ (Pl. V., fig. 3*a* to *c*).

Randomia Auroræ, Nat. Hist. Soc., Bull. xviii., p. 190, pl. i, figs. 3*a* to *c*.

This is one of the commoner species of the Etcheminian limestone at Smith Sound.

An erect high species, oval in outline, about a fifth longer than wide, and about a third wider than high. It has about ten prominent ridges diminishing in size toward the apex. The apex is somewhat in front of the middle of the shell, and the raised concentric ridges are somewhat higher on the dorsal than on the anterior slope.

Sculpture.—The surface of the shell is marked by very fine sharply raised lines, diverging from the apex toward the margin; there are about six of these lines in the space of one millimetre.

Size.—Length of the aperture, 25 mm.; width, 20 mm.; height about 16 mm.

The writer at first was disposed to refer this shell to *Stenotheca rugosa* var. *abrupta*, Shaler and Foerste,[2] with which small examples, having only six ridges, closely agree. But as these authors obtained some twenty specimens of their shell, and found it to have only four or five ridges, it would appear that it must be distinct.

The very prominent ridges, straighter dorsal slope, and fine radiating raised lines distinguish it from *Stenotheca* [?] *rugosa*, Hall, and *S.* [?] *paupera*, Bill.

Parmophorella (?) paupera, Bill., sp.

Stenotheca pauper, Bill., Palæoz. Foss., vol. ii., pt. i., p. 77 (no figure).
Parmophorella (?) *paupera*, Bill. sp., Bull. Nat. Hist. Soc. N.B., p. 190.

This species was described by Billings as follows: "Shell, small; conical, with the apex incurved, laterally compressed. Aperture ovate, elongate in the plane in which the curvature of the apex occurs. Surface with four or five small, engirdling convex ridges.

[1] Geolog. and Nat. Hist. Survey of Minnesota, vol. iii., pt. ii., p. 821 (foot).
[2] Mus. Comp. Zool. Camb. Bull., 1888, p. 29, pl. i., figs. 9*a* and *b*.

"[*Size.*]—Length of aperture about 1 to 1½ lines [3½ mm.] ; width about one line [2 mm.] ; height of the shell about 1 line.

"[*Locality and Horizon*].—Occurs in the red limestone at Brigus, Conception Bay."

I find a few specimens answering to this description ; the ridges are somewhat irregular, and there are concentric striæ of growth. These shells are all compressed laterally, indicating that they had a narrow oval aperture.

Mr. Walcott reduces this species to a variety of *Stenotheca rugosa*, Hall. On comparison with examples from Troy, I do not find that the shells from Smith Sound are conspecific. Those from Troy are finely granulated and have about nine ridges of growth ; those of Smith Sound are concentrically striated and have only four or five ridges. The Troy specimens stand erect on their apertural base, these are found lying on their side in the limestone bed.

The generic name Stenotheca has been applied to shells of this form by various authors ; it is not used here for reasons given in Trans. Roy. Soc. Can., vol. viii., sec. iv., p. 132.

PLATYCERAS, Conrad.

PLATYCERAS TRANSVERSUM (Pl. V., figs. 4*a* and *b*).

Platyceras transversum, n. sp., Nat. Hist. Soc. N.B., Bull. xviii., p. 190, pl. i., figs. 4*a* and *b*.

A small species of one whorl, with the spire scarcely at all elevated. Aperture campanulate in front, slightly contracted behind. A low carina with a shallow groove on each side extends along the centre of the dorsum to the aperture.

Sculpture.—The surface is granulated and marked also by very fine, closely set lines of growth, which are not distinct on the dorsum. The sculpture on this shell resembles that on the ventral surface of a Hyolithes or Orthotheca.

Size—Length along the whorl to the mouth 6 mm. ; height, 3½ mm. ; length of aperture, 4½ mm. ; width nearly 4½ mm. Infrequent.

The figures given by Mr. Walcott as those of the young of *Stenotheca rugosa* agree with this species in size and form.[1]

Under *Stenotheca rugosa* Mr. Walcott figures a shell from Troy, N.Y., which resembles this species.[2]

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[1] U.S. Geol. Surv. Bull. 30, pl. xii., figs. 1*d* and *e*.

[2] U.S. Geol. Surv. "Olenellus Zone," pl. lxxiv., figs. 1*h* and 1*i*.

Platyceras radiatum (Pl. V., figs. 5*a* and *b*).

Platyceras radiatum, Nat. Hist. Soc. N.B., Bull. xviii., p. 191, pl. i., figs. 5*a* and *b*.

A small species of one whorl. Spire depressed, back rounded, but with a faint carina indicated by a rib stronger than the others adjacent. The shell has about a dozen fine, narrow, sharp ribs on the dorsum, radiating from the umbo to the aperture ; and there are also faintly marked and more distant transverse undulations, parallel to the aperture. The aperture is a little campanulate in front and somewhat constricted behind.

Sculpture.—The surface is minutely granulate ; this granulation extends over the ridges which traverse the dorsum, so that these ridges are visible only by transverse illumination.

Size.—Length along the whorl to the aperture, 4½ mm. ; width of aperture 2½ mm. Infrequent.

Distinct by its size and surface markings from any Cambrian species known. By its radiate markings this species might be thought to be connected with the genus Heliconopsis, Ulrich and Scofield, but the projecting umbo and dorsum seem to exclude it.

Platyceras cymbula (Pl. V., figs. 6*a* and *b*.)

Platyceras cymbula, Nat. Hist. Soc. N.B. Bull., xviii., p. 191, pl. i., figs. 6*a* and *b*.

A small species of one whorl ; spire depressed ; shell strongly carinate ; apex obtuse, turned slightly to the left and appressed nearly to the anterior margin. On the dorsal half of the shell there are sharp thread-like ridges radiating from the umbo to the aperture, where there are a dozen or more ; these increase by intercalation ; obscure concentric swellings at irregular intervals somewhat obscure the sharpness of the radiating ridges.

Sculpture.—As in the preceding species the surface is minutely granulated.

Size.—Length over all, 5 mm. ; length of the aperture, 4 mm. ; width, 3½ mm. ; height, 2½ mm. Rare.

This species is distinguished from the preceding by its sharper dorsum and wider aperture

Platyceras apertum of the Paradoxides Beds is distinguished from the two preceding by the closeness and fineness of its radiating striæ, and from *P. transversum* by the stronger undulations on the part of the shell toward the aperture.

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[1] Lower Silurian Gasteropoda of Minnesota, Geol. Surv. Minnesota, vol. iii., pt. ii., p. 826.

LAMELLIBRANCHIATA.

MODIOLOPSIS, Hall.

MODIOLOPSIS THECOIDES (Pl. V., figs. 7*a* to *c*.)

Modiolopsis thecoides, Nat. Hist. Soc. N.B., Bull. xviii., p. 191, pl. i., figs. 7*a* to *c*.

A peculiar shell of which only the right valve is known, is referred to the above genus on account of its general form, and the hinge.

The valves are elongate, sub-cylindrical, broadly rounded in front, and having the front end flattened as far as the umbo. The umbo is distinct but not prominent. The valve gradually broadens and flattens toward the posterior end, where it is broadly rounded. The greatest width is about one-quarter or one-fifth from the posterior end. There is a ligamental pit just opposite the umbo, and another pit a little further back along the hinge-line. The shell gaped somewhat at the end, the anterior muscle-scar is indicated by a depression on the anterior flattened part of the shell ; the posterior muscle-scar is apparently indicated by a sub-central depression two-thirds from the umbo.

Sculpture.—This consists of numerous arching striæ of growth like those of Hyolithes ; with about six stronger grooves marking a periodic enlargement of the shell.

Size.—Length, 9 mm. ; width at the umbo, 2 mm. ; at the posterior end, 4 mm. ; depth of the valve, $1\frac{1}{4}$ to $1\frac{1}{2}$ mm.

The slow and regular enlargement of this shell from the umbo, the arched striæ on the surface and the gaping of the end causes it to resemble a Hyolithes.

This shell in its small size and elongated form is unlike any Cambrian or early Ordovician Modiolopsis.

ANNELIDA.

Since the publication of the reports of the Challenger Expedition we have been accustomed to think differently of the Hyolithidæ than heretofore. An author who has given the closest attention to the Pteropoda and who has written the report on this class of animals for that publication, utterly repudiates any connection between the Hyolithidæ and the Pteropoda. This author, Dr. Paul Pelsineer, says : "I completely abstract certain primary fossils, usually referred to the Pteropoda. I have a deep conviction that these organisms do not really belong to the group in question, and am firmly of the opinion that Pteropoda do not occur as fossils until the end of the Lower Tertiary." [1] and farther on (page 92) he adds : "In the Secondary Period [Mesozoic] there existed no Ptero-

[1] Challenger Expedit., vol. 23, part ii., p. 7.

pod analogous to the Tertiary Thecosomata," and he says, "I cannot admit among the Thecosomata the so-called Primary Pteropods." At page 93, he says, "Hyolithes is distinguished from all Pteropods by their triangular form, their partitions and their operculum, which in no respect resembles that of any operculate mollusc.

Since Pelsineer has rejected the Hyolithidæ from among the Pteropoda, and declares that they cannot find a resting place in that group, it becomes necessary to seek for their living analogues.

For a number of years I have been convinced that these shells sometimes heavy and thick, and frequently associated with littoral species, could not have any relation to Pteropods, but was not prepared to suggest another relationship, and so left them among the Gasteropoda. Late observations among the primitive forms of the Etcheminian system described in the succeeding article have led me to the conclusion that the proper place for the Hyolithidæ is among the Marine Worms. This inference is made chiefly on the basis of the observed larval stage, the later stages of growth, and the nature of the operculum.

One objection to considering the Hyolithidæ Gasteropods is that we can detect nothing answering to the Protoconch of the Molluscs; but on the contrary the initial part of the shell, when preserved proves to be a slender, terete tube, varying from cylindrical to narrowly conical, and in a number of species found to be divided into short segments by delicate diaphragms.[1]

This condition is parallel to what we find in many sea-worms, as for instance in *Phyllochætopteris claperadi*[2] in which the tube, in form and consistency, may be compared with the larval part of the tube of *Hyolithellus* (?) *flexuosus*.[3] The rigid and quill-like tube of *Hyalinœcia tubicola*[4] also may well be compared with those of species of Urotheca described in this article, which has a long, slender tube like that species; and which, like that of the species in question, is chitinous. Some annulated tubes as *Plagostegus ornatus*, Sow., are seen to taper to a slender point like *Hyolithes caudatus*[5] of the Paradoxides beds at St. John, others are stout and truncated (*Nathria pycnobranchiata*[6]) like many species of Hyolithes.

It is to Serpula, however, and Ditrypa that we may look for closer parallels to Hyolithes, which has a calcareous tube. Ditrypa both in size and form, approaches species of Orthotheca, and although the latter, in

[1] For an earlier account of these structures in the Hyolithidæ see Can. Rec. Sci., vol. 1, no. 3, p. 149, figs. 1 to 3. (N.B.—The numbers have been misplaced for figures 2 and 3.)

[2] Challenger Rep., vol. xii., p. 374, pl. 45, figs. 10 and 12.

[3] Described in this article.

[4] Challenger Rep., vol. xii., p. 336, pl. 40, fig. 1.

[5] Trans. Roy. Soc. Can., vol. iii., pt. iv., p. 53, pl. vi., figs. 5, 5*a*.

[6] Challenger Rep., vol. xii., p. 319, pl. 40, fig. 13.

all the species I have seen, is closed at the small end, this is effected by a diaphragm, possibly the last of the series of diaphragms of a larval tube. Serpula and Placostegus[1] exemplify best the thick calcareous tubes of some Hyolithes ; and the former in its operculum best represents that of Orthotheca ; from the operculum of Orthotheca that of Serpula differs in the greater number of rays which mark it. Pelsineer as above remarked, says the operculum of Hyolithes is not that of an operculate Mollusc and this perhaps because it does not show the spiral growth seen in those of Gasteropods, but exhibits a radiate arrangement of parts. *Pomatoceras strigiceps*[2] and *Serpula nacronensis*[3] both show these radiations in the operculum, and have thick calcareous tubes, somewhat pentagonal in form like some species of Hyolithes.

Since then we may no longer associate the Hyolithidæ with Pteropoda, a place may be found for them among the Tubicolous Worms. Theoretically we may regard these tubes as having a larval initial portion, persistent in some species but caducous in most. This tube was very slender, cylindrical, and in some cases hyaline (therefore probably very thin). This larval tube passed into one of calcareous substance and conical, which possessed one or more diaphragms or septa. At this point a Hyolithes tube is apt to be decollated so that usually the larval portion is wanting. Beyond the septa, in the upper part of the tube, we can usually find two conditions of structure in the shell, a lower part, firmer and more rigid owing to a thickening of the test which is here strengthened by vertical rods within its substance ; and an upper part where these rods are wanting, and the shell is thinner ; this part of the tube has usually not so wide an apical angle as the camerated part below.

Linking the Hyolithidæ with the Worms are two families distinguished by their shell substance, but otherwise having much in common with the above family. One of these (defined by Dr. Gerhard Holm in his notable essay on the Swedish Cambrian-Silurian Hyolithidæ and Conulariidæ) is Torellellidæ, founded on the genus Torellella, having a phosphatic test ; the other is that to which the genera Urotheca and Byronia belong, genera which are described in connection with the fauna of Mount Stephen in a preceding article ; in these the tube is chitinous. No larval tube has been described for Torellella, but we find it distinctly present in the species of Urotheca of the Mount Stephen Fauna. These two families differ from Hyolithidæ in having a flexuous tube. Hyolithes while often curved is bent in one plane, but both Urotheca and Byronia as well as Torellella are often bent in more than one direction, and by their flexible and camerated tubes show close affinity with the sea worms.

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[1] Chall. Rep., vol. xii., p. 524, pl. 55, fig. 7.
[2] Chall. Rep., vol. xii., p. 522, pl. 55, figs. 5 and 6.
[3] Ibid. p. 516, pl. 55, fig. 1 and p. 54, fig. 5.

UROTHECA.

(Genus defined in preceding article on Mount Stephen Fauna).

Urotheca pervetus (Pl. V., fig. 8).

Urotheca pervetus, Nat. Hist. Soc. N.B., Bull. xviii., p. 191, pl. i., fig. 8.

Proximal end unknown ; distal end exhibits a slender, gently curved chitinous tube. All the examples are pressed flat in the shale and so the form of the orifice is not seen.

Sculpture.—No transverse striæ were observed ; but faint longitudinal striæ are present, these may be due to compression.

Size.—Length of the part preserved, 35 mm. ; width at the small end, 1½ mm. ; at the aperture, 3½ mm. Rate of tapering of this part of the tube 1 to 17.

Horizon and Locality.—Gray shales below the Upper Etcheminian limestone on Smith Sound, Nfld. Scarce.

In Swedish Cambrian beds at an horizon which may be considered equivalent to the Protolenus Zone on this side of the Atlantic occurs a small species of tube shell, which was at first referred to Hyolithes and subsequently by G. Holm established with one other species as a new family [1] under the names Torellella and Torellellidæ, and which some might think congeneric with the form above described. But Holm claims that it has been clearly established by Dr. H. Santesson, of the Swedish Geological Survey, that the tubes of Torellella is of a phosphatic nature, for Santesson found 66 per cent [2] of calcium phosphate in examples of this shell from a hard sandstone from Haverholm in Finland. *T. lævigata*, the species in question has been found at many localities in Sweden and Finland, and although the rocks at a number of these places has been described as phosphatiferous (and although we have excellent examples of *Hyolithellus micans* quite phosphatized in the sandstone of Division 1*b* of the St. John Group, from which we might suppose that this was a phosphatic tube originally) yet we cannot but think that the phosphatic nature of the shell of Torellella has been established by Dr. Holm on good authority. This being the case it becomes impossible to refer the species we have just described to Torellella. It is equally impossible to refer it to Orthotheca because we have calcareous organisms in the same layers with *Urotheca pervetus*, while its tubes are evidently chitinous ; hence it falls most naturally into the genus Urotheca.

Torellella is described as having in all cases a flat-oval shape to its tube, the species above cited has only been found in a flattened condition, so the transverse section of the tube is unknown.

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[1] Swedish Cambrian—Silurian Hyolithidæ and Conulariidæ, Stockholm, 1893, p. 146-147.

[2] Dr. Santesson found 66·19 calcium phosphate.

HELENIA, Walcott.

Mr. Walcott discovered a curious flattened tube in the conglomerate limestone at Manuel's Brook. From the fact that it was open at both ends he referred these tubes to Dentaliidæ. Though I have not seen the species described by that author I have met with a fossil which seems related to it. The flattened elliptical form of the tube makes one suspect a relation to Torellella, but we find no evidence that the shell was phosphatic ; it is very thin, and appears to be of a calcareous composition, we have therefore used Walcott's generic name, but would not refer the Etcheminian form to the Dentalidæ, but rather would suppose it related to the tube worms. Some of the sea worms have quite flat bodies (especially some parasitic forms).

HELENIA GRANULATA (Pl. VI., figs. 7*a* to *e*).

Helenia granulata, Nat. Hist. Soc., Bull. No. xviii., p. 192, pl. ii., figs. 7*a* to *e*.

Small, much flattened, curved tubes ; the curve not in one plane, but the tube somewhat twisted. The tubes enlarge toward the orifice so that in a distance of 10 mm. in the smaller part of the tube the long diameter is doubled.

Sculpture.—The surface is minutely granulated.

Size.—Only fragments of 10 mm. and less are known. The widest section is $2\frac{1}{2}$ mm., diminishing to $\frac{1}{2}$ mm. This is the longer diameter ; the shorter is a fifth to a seventh of this, the tube becoming more flattened toward the aperture.

The peculiar curve of this shell, which is mostly parallel to the flattening of the shell, not at right angles to it, as in Hyolithes, distinguishes it from all its associates. In this it resembles the pleural or genal spines of trilobites, but we have not found in association any other parts of trilobites.

HYOLITHELLUS, Billings.

The history of this name is a singular one, and to me the actual genetic relation of the objects included under it is obscure.

In 1872, Mr. Billings found a slender cylindrical object in the conglomerate limestone of Troy, N.Y., under this name separating it from Hyolithes on account of its long slender form and peculiar (supposed) operculum.[1]

In the following year appeared Prof. James Hall's description of the genus Discinella, which was based on the object which Billings had described as the operculum of Hyolithellus.[2]

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[1] Can. Naturalist, New. Ser., vol. vi., p. 240.

[2] 23rd Rep. New York State Museum of Nat. Hist., p. 246.

In 1886 Mr. C. D. Walcott revised this species in connection with new material which he had collected, and gave his opinion in favour of Billings's determination.[1]

In 1892 Dr. J. C. Moberg described a fauna from a block of Cambrian sandstone collected by Dr. N. O. Holst on the island of Œland in Sweden. In this fauna was a fossil which resembled the supposed operculum of Hyolithellus, and which Dr. Moberg referred to the genus Discinella of Hall. This fossil was found to be very abundant, but any object that could be taken for the tube of Hyolithellus, was quite rare. Hence Moberg concluded that the "operculum" and the tube of Hyolithellus did not belong together, and that Hall was right in referring the so called operculum to a Brachiopodous genus, viz., Discinella.[2]

A year later Dr. Gerhard Holm had occasion to consider the standing of Hyolithellus in connection with his extensive memoir on the Swedish Cambrian-Silurian Hyolithidæ and Conulariidæ. He also rejects Hyolithellus from among the Hyolithidæ, stating that the name was based chiefly on a genus previously described by Hall as Discinella. He adds: "this" genus is connected by Billings and Walcott with some shining reed-shaped objects whose nature is hard to determine, but which probably belong to sponges.[3] Holm therefore rejects the genus Hyolithellus altogether.

The collections made in Newfoundland favour the conclusion of Dr. Moberg, viz., that the rods and Discinella do not belong together for while long slender rod like bodies are plentiful in the Upper Etcheminian limestone of Smith Sound, no object resembling Hall's Discinella was observed.

The author could not, however, satisfy himself that the slender rod-like bodies so common in this limestone were connected with a Hyolithoid shell as large as that described by Billings; it seemed rather that they only attained a certain size, and that the much less numerous fragments of larger size were portions of shells of Orthotheca. If, however, the supposed operculum be removed to another class of animals, and the larger fragments be also eliminated, there still remains a definite application of the name Hyolithellus to a portion of the objects for which it was used by Billings, namely the slender shining rods that are so plentiful in the limestone and stand at various angles in the calcareous paste.

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[1] U.S. Geol. Surv. Bull. 30, p. 142.

[2] Geol. fören. i Stockholm, Förhandl Bd. 14, Hft. 2.

[3] They are too large, even the smaller tubes, to be spicules of sponges, and their shell is thin.

HYOLITHELLUS MICANS, Bill. (pars) (Pl. VI., figs. 1*a* to *d*).

Hyolithellus micans, Bill. (pars), Nat. Hist. Soc. of New Brunswick, Bull. xviii., p. 192, pl. ii., fig. 1*a* to *d*.

The objects hereto referred appear to agree both in form, size and association with the "long, slender cylindrical species" which Billings has described under the above name. The only reason I have for doubting the relation to Billings's species is, that I have not been able to trace these objects into tubes of so large a size as 2 or 2½ lines. The latter is the limit of size which he gives and which he says would require a length of four or five inches for the shell.

Size.—The longest of these objects which I have been able to break from the matrix is 20 mm. with a diameter of scarcely 1 mm. reduced at the small end to ½ mm. ; the full length would not be more than 40 mm. (1½ inches).

Sculpture —Although these objects have a shining surface they are not smooth but are minutely granulated and show no lines of growth transverse to the tube, such as we find in most species of Orthotheca. Those that occur with *O. bayonet* have not as bright a surface as some of the others.

Mode of occurrence.—The peculiar attitude of these rods in the calcareous mud in which they are imbedded arrests attention. It is quite a common thing to find two of these rods almost strictly parallel to each other and quite commonly they occur in sheaf-like clusters, radiating at a narrow angle from each other ; this would appear to indicate that they are subsidiary organs belonging to some larger organism. Holm has suggested that they are the spicules of sponges. Such an origin is possible, though I do not think it likely, for though these objects are rigidly straight, or only slightly curved, yet examples filled with spar show that the side walls were quite thin. Also, they have a diameter ten times that of ordinary sponge spicules and twice the size of the groups of several spicules, that form the mesh of Euplectella. Thus while at first sight there seems some probability in this view, especially when one observes the smooth, shining surfaces of these tubes and their attitude in the limestone ; it will not bear application, for against this explanation of their origin is the fact that they are much larger than any spicules of sponges. Among the numerous forms figured in the Challenger Reports we cannot pick out any that approach Hyolithellus in size ; the Tetractinellids which appear to have the largest spicules still cannot show any that are more than one-eighth of the diameter of Hyolithellus. The sponge-spicules also usually have a narrow cavity within, while Hyolithellus has a large one, the shell being thin. It is true that this genus as preserved in the phosphate-bearing sandstones of the Protolenus Zone of the St.

John group, has a small passage only; but these fossils are preserved in calcium phosphate and the diameter of the passage through the tube has been reduced by an incrustation of colloid phosphate. We are therefore compelled still to regard these tubes as dwellings or the appendages of some gasteropod, or of that still more ancient type, the Worm.

These rods are very common in and around the shells of the Hyolithidæ, they not infrequently occur close outside of these shells and parallel to them; in the interior of Hyolithoid shells they are irregularly and confusedly imbedded. They have been seen to diverge in groups of two or three from the lateral angles of the mouth of *Orthotheca bayonet*, and singly from the oral end of the low ridges on the dorsal side of that species; still these occurrences may be accidental. All that can be said in reference to the origin of these rods is that they appear to be subsidiary parts of another, but as yet undetermined organism.

While I have no doubt that Mr. Walcott has referred objects of this kind to Hyolithellus, especially when speaking of the fossils of Manuel's Brook, it is not likely that Billings had these alone in view when he described *Hyolithellus micans*. It seems preferable, however, to retain his name for these slender rods with shining surfaces that occur so plentifully in the earliest Cambrian and the Etcheminian strata.

Hyolithellus (?) flexuosus (Pl. V., fig. 9).

Hyolithellus (?) flexuosus, Nat. Hist. Soc. N.B., Bull. xviii., p. 192, p. i., fig. 9.

A small slender tube. The proximal part is very slender, straight and hyaline, this enlarges somewhat abruptly into a terete opaque tube, which is curved in one or more planes.

Sculpture.—The surface is smooth; no growth lines were observed.

Size.—Full length unknown, 7 mm. or more. Diameter near the proximal end about $\frac{1}{6}$ mm., at 6 mm. from that end $\frac{1}{2}$ mm. Rate of taper of the known part 1 to 20. Infrequent.

This species is not far from the size of *Hyolithes lævigatus*, Linrs. (Torellella, Holm) and has a similarly flexed tube; but it differs from that species in having a calcareous tube, and in being circular in cross section.

Hyolithes caudatus of 1*d* of the St. John Group has a flexible proximal tube, but it has not been traced down to the long slender larval tube of this species, and the upper part of its tube differs.

It seems to me not impossible that some of the objects which Mr. Walcott has referred to *H. micans*, may belong to this species, as for instance that figured 1*a* of Plate lxxix. of the "Olenellus Zone" Fauna.

The slender cylindrical hyaline tube at the proximal end of this species indicates a membranaceous tube for the larval stage, or one of extremely attenuated chitin. Several of these tubes were observed in the limestone, whose connection with an enlarged tube was not apparent; they were all of about the same size.

COLEOIDES, Walcott.

COLEOIDES TYPICALIS, Walc. (Pl. VI., fig. 2).

Coleoides typicalis, Walc., Proc. National Museum, vol. xii., 1899, p. 37, figure in "Olenellus Zone," pl. lxxix., fig. 6 and 6*a*.
Coleoides typicalis, Walc., Nat. Hist. Soc. N.B., Bull. No. xviii., p. 192.

Examples which appear to agree in all respects with the object which Mr. Walcott has thus named, occur at Smith Sound.

Sculpture.—The striæ are very fine, and as figured in plate lxxix., in most cases incline to the right, though one was observed in which the striæ inclined to the left. Those on the larger specimens seem quite as close and fine as those on the more slender pieces.

Size.—The largest fragments met with have a diameter of $1\frac{1}{2}$ mm. and a length of 6 mm., other narrower ones have a length of 10 mm. About a dozen pieces of those rods have been seen.

Mode of occurrence.—Coleoides comports itself exactly in the same way as Hyolithellus ; the pieces are occasionally in close parallelism with each other, and again they occur in slightly radiating groups ; and elsewhere are scattered in and near the tubes of Hyolithida. Whatever the tubes of Hyolithellus may prove to be, these objects will go with them. Examples of Coleoides occur in which the striation is so faint that it is difficult to distinguish them from those of Hyolithellus.

ORTHOTHECA, Novak.

ORTHOTHECA PUGIO. (Pl. VI., figs. 4*a* to *e*).

Orthotheca pugio, Nat. Hist. Soc. N.B., Bull. xviii., p. 193, pl. ii., figs. 4*a* to *e*.

An elongated, thick-shelled species, somewhat flattened on the dorsal side ; this side is more strongly arched longitudinally than the ventral side, causing the tube to have a considerable curve towards the apex. In an example, 27 mm. long, the cord of the arc of the dorsal side is 1 mm. long. The apical part of the tube frequently has one or more septa, concave on the upper side, usually placed where the diameter is $1\frac{1}{2}$ or 2 mm., but sometimes where it is 3 mm. ; the shell may be decollated below the lowest septum. The taper of the tube varies from 1 to 7 in the apical part, to 1 in 9 in the distal part of the tube ; often it is more regular at about 1 in 8. Apical angle about 7°.

Sculpture.—There is a fine granulation over the whole surface through which in places, especially toward the aperture, obscure transverse striation can be seen with a lens, and more commonly on the ventral side. The striæ are slightly deflected downward at the rounded lateral angles, showing the mouth of the tube to be somewhat emarginate there.

Size.—No complete example is known. The mouth of the tube has a width of 6 mm. The length, estimated from the parts known, would be about 40 mm. if not decollated.

This tube is frequently found ensheathed in that of other species.

This species is near *Hyolithes communis.*, Billings, in general form, but the aperture differs ; in Billings's species there is a projecting dorsal "lip," while in this the aperture is directly transverse on the dorsal side ; there is also a difference in the sculpture, as there are no longitudinal striæ on *O. pugio.* I have not found any of the thick shells figured by Walcott (Bull. No. 30, pl. xiv., figs. 3*f* and 3*g*.) as belonging to *H. communis.*

On the other hand the operculum figured by this author (fig. 3*c*) is plainly that of an Orthotheca ; possibly there are two species confused under Billings's name, of which 3*d* and *e* may represent an Orthotheca.

Dr. Gerhard Holm has described from the Lower Cambrian of Sweden two species which are near this one, and which he supposes when better known may prove to be one and the same species, *O. DeGeeri* and *O. Johnstrupi.* The former is said to be perfectly flat along the middle of the dorsal, and to be probably smooth ; in both these respects it differs from *O. pugio.* The latter (*O. Johnstrupi*) seems a more slender elongated shell, and the sculpture differs.[1]

Operculum (Pl. VI., fig. 4*e*).

(Of this species or the next.) Nearly flat. Elliptical in outline, somewhat straightened on one side (dorsal). Nucleus nearly central, pointed ; from it a ridge extends on each side to the middle of the dorsal and ventral margins ; these ridges widen as they go outward ; on the ventral side there is a lower ridge on each side of the central one. A shallow furrow, interrupted by the nucleus extends across the operculum on the long diameter.

Sculpture.—This consists of minute granulations, and of faint, fine engirdling striæ, with several heavier growth lines.

Size.—Length, 5 mm ; width, 4 mm.

The substance of this operculum appears to be thin, and some examples show but little straightening on the dorsal side.

Orthotheca sica (Pl. VI., figs. 5*a* to *d*).

Orthotheca sica, Nat. Hist. Soc. N.B., Bull. xviii., p. 193, pl. ii., figs. 5*a* to *e* and figs. 6*a* and *b*.

Elongated conical shell, sub-triangular in section, the back of the ventral side being broadly rounded and the lateral angles more sharply

[1] Swedish Cambrian-Silurian Hyolithidæ, &c., pp. 54, 56, pl. i., figs. 25 to 27 and 28 to 30.

rounded; slightly campanulate on the ventral side of the aperture; aperture slightly raised at the lateral angles; one or more imperforate septa at the apex of the shell. The dorsal side is flat, but not concave; the sides of the ventral are also somewhat flattened. The rate of tapering of the tube was 1 in 5 near the apex and 1 in 7 for the rest of the tube.

Sculpture.—This consists of a fine granulation subordinate to close fine transverse striæ, scarcely visible to the naked eye. These striæ are diversified with a few stronger growth-lines, which show that the orifice of the shell was slightly depressed in the middle, both on the dorsal and ventral sides.

Size.—No complete example known. The width of the aperture is from 6 to 7 mm. Length of the complete shell (if not decollated) estimated at 40 mm.

A variety of this species (Pl. VI., figs. 6*a* and *b*) in place of the rounded back of the ventral side shows a flattened surface, giving a somewhat quadricostate aspect to the tube, but the resultant ridges are less prominent than those figured by Mr. Walcott, for the specimens of *H. quadricostatus*, obtained by him in Newfoundland, and much less than those of the type of the species obtained at Attleboro', Mass.[1]

There appears to be no related species in the Swedish Cambrian.

O. sica may be distinguished from *O. pugio* by its smoother surface, more triangular section and more distinct surface striæ.

Except *Hyolithes excellens* this species and the preceding one are the most abundant fossils in the Etcheminian limestone of Smith Sound.

Operculum (Pl. VI., fig. 4*e*).

We describe here an operculum which may possibly belong to this species, though it is of a form more nearly corresponding to the orifice of *Orthotheca stiletto* (see beyond); but we have found no example of this species large enough to contain such an operculum.

Subtriangular, rounded on the ventral side. Nucleus one-third from this side, prominent but obtuse. From the nucleus to the ventral margin all around the operculum is convex, conversely there is a triangular depression extending from the nucleus and widening to the dorsal border.

Sculpture.—The surface is finely granulated, but faint engirdling striæ may be detected.

Size.—Length, $4\frac{1}{2}$ mm.; width, 3 mm.

Orthotheca stiletto (Pl. VI., figs. 3*a* and *b*).

Orthotheca stiletto, Nat. Hist. Soc. N.B., Bull. xviii., p. 193, pl. ii., figs. 3*a* and *b*.

A small, slender, straight species with a very tenuous tube. It has

[1] Mr. Walcott's species is probably an Orthotheca as the rate of tapering is 1 to $6\frac{1}{2}$; Shaler and Foerste's species on the contrary tapers 1 to $2\frac{1}{2}$, which indicates a Hyolithes.

a concave dorsal side and a rounded, convex, ventral side ; about one-third of the dorsal side is concave and the remainder toward the lateral angles, convex. The ventral side of this species has not been seen, but a section of the tube near the orifice shows it to have been rounded and strongly convex.

The rate of tapering is about 1 to 8. Apical angle about 7°.

Sculpture.—The dorsal side of the tube has fine, closely set striæ of growth, directly transverse, just discernable with a strong lens.

Size.—This species has a width at the aperture of 2 mm. and a length of about 15 mm.

This species belongs to Holm's division Plicati of Orthotheca and is related to *H.* (*O.*) *affinis*, Holm, which in Sweden extends through the Paradoxides Beds ; but it is not half of the diameter of that species, and is a more elongated form.

Orthotheca bayonet (Pl. VII., figs. 1*a* to *e*).

Orthotheca bayonet, Nat. His. Soc. N.B., Bull. xviii., p. 193, pl. iii., figs. 1*a* to *e*.

Tube thin ; section triangular ; the two ventral slopes as flat as the dorsal. The dorsal side slightly concave in the middle, but somewhat convex toward the lateral angles ; it has two faint longitudinal ridges, which in some cases are scarcely discernable, bounding the depressed, central area ; this area is more than two-thirds of the whole width of the dorsal side.

The ventral side is strongly convex at the middle, with a rounded angle at the axial line ; on each side of this is a faintly marked narrow longitudinal ridge, sometimes not traceable. Each half of the ventral side is convex toward the median line of the tube and concave toward the lateral angle.

The orifice declines at the lateral angles on the ventral side, where it is notched ; the edge of the orifice on the dorsal side is slightly convex outside the longitudinal ridges near the lateral angles, and concave in the space between these ridges ; the aperture is thus somewhat lower on the dorsal than on the ventral side.

Sculpture.—The outer surface is finely granulated, and is traversed by very fine striæ (visible only with a lens) that conform in their course to the shape of the aperture ; there are also large shallow undulations of growth on the two slopes of the ventral side.

Size.—This tube has been found only in fragments ; the largest observed would indicate an aperture 8 mm. across, and the taper of the shell is as 1 to 5 (one is 1 to 4). Apical angle 10°. The length of the complete shell may be 40 mm.

This tube is so thin that it is liable to distortion, and also liable to

break along the lateral angles ; when the sides are thus separated fragments may be mistaken for the pleuræ or spines of trilobites.

Though the central depression of the dorsal side of the species is more than two-thirds of the whole width of that side, the species may be regarded as falling within the section Plicati of G. Holm and in this section under the group A*b*., typified by *O. affinis*, to which, however, the preceding species is more nearly related than this one is.

This species differs from *Hyolithes Americanus* in the absence of a lip to the dorsal side, and in having the lateral angles more acute than the median angle of the ventral side. It differs from all the Orthothecæ described by Walcott (under Hyolithes) in its angular form. It differs from all those described by Gerhard Holm by the acuteness of the lateral angles, and by the concave form of the ventral slopes near those angles.

HYOLITHES, Eichwald.

HYOLITHES EXCELLENS, Bill. (Pl. VII., figs. 3*a* to *i*.)

Hyolithes excellens, Billings, Palæozoic Fossils, vol. ii., pt. i, p. 70, fig. 3*g*.
Hyolithes excellens, Bill., Nat. Hist. Soc. N.B., Bull. xviii., p. 194, pt. iii., figs. 3*a* to *i*.

This is the leading species of the Etcheminian Fauna at Smith Sound, being the largest and most abundant one.

The following is Billings's description : " Shell usually about two inches in length, tapering at the rate of between four and five lines to the inch. The ventral [dorsal] side is nearly flat, or very gently convex ; the lateral edges narrowly rounded, in some specimens rounded angular ; the most projecting parts of the sides are about one-third the height ; above this the sides are gently convex, the dorsum more narrowly rounded. The shell is thin, nearly smooth, with very fine obscure striæ, about ten in one line. The striæ curve forward on the ventral [dorsal] side, forming an arch, the height of which is equal to about one-third the width of the shell. On crossing the lateral edges the striæ curve backwards until they reach the most projecting part of the sides, then cross up and over the dorsum [venter] at a right angle. On a side view the shell is gently curved downwards on approaching the apex."

" A specimen twenty-four lines in length on the ventral [dorsal] side in eight and one-half lines wide and six in depth at twenty lines from the apex."

" A specimen twenty-four lines in length on the ventral [dorsal] side is eight and one half lines wide and six lines in depth at twenty lines from the apex."

" Occurs in red limestone at Smith's Sound, Trinity Bay."

The extreme length of this species would be about 54 mm., judging from the rate of tapering ; but all adult shells found were decollated.

The lip of the shell is somewhat campanulate on the ventral side.

There is a considerable difference in form between the adult and the young of this species, for where the width is 3 mm., the depth (from ventral to dorsal side) is 1½ mm. ; and where it is 5 mm. in width it is 3 to 3½ mm. in depth ; but at the orifice of an adult tube where the width is 17 mm., the depth is 13 mm. This rounding of the tube in the distal half is accompanied by a transfer of a part of the dorsal surface to the ventral side ; the transfer begins when the width of the shell is about 6 mm. and gradually increases until the adult condition is reached. Along the line on the ventral side, where the course of the striæ is changed, a low ridge is developed on the surface of the tube to which a shallow furrow on each side is complementary.

The shell is frequently decollated at the small end, the mutilation occurring at the line of a septum. Or possibly the septum is in some cases a secondary growth produced after the decollation occurred. This seems possible, as the lowest septum is often found to project as a callus beyond the outline of the outer surface of the tube, as though the animal had power to repair and strengthen its tube at the proximal end. Several of the decollated shells have a second septum dividing a small chamber at the proximal end of the tube. The exposed septum at the lower end becomes as thick as the side-walls of the tube.

Sculpture.—The obscurity of the striæ spoken of by Billings applies chiefly to the dorsal side, though even on this side, when the outer surface is well shown, it is seen to be traversed by fine, closely set, arched striæ. On this side also there are faint undulations that are arched and conform in a general way to the course of the striæ on this side.

On the ventral side the striæ, though fine are quite distinct when viewed with a lens. Many shells also exhibit undulations of the surface more or less distinct ; on some shells they are continuous from the small end and are about twenty in number. They are not all of equal width as in Orthoceras, but some are narrower than others as in Tubicolous worms, etc., and they are proportionately closer toward the apex of the shell.

Billings gives the rate of tapering in this species as four or five lines to an inch. I have found the proportion 1 to 3 prevalent, though one of 1 to 3·4 was observed. Billings makes the apical angle 20° ; this is the angle at the aperture, at the proximal end it is greater.

Operculum.

Billings makes no reference to the operculum of this species. But it is not rare in connection with the tube and has the following characters : The outline is broadly oval and the dorsal part, including the nucleus, is bent upward from the dorsal at an angle of 25° ; the nucleus is raised

abruptly from the ventral limb and curves down slowly to the dorsal limb ; on a few well preserved opercules, two very faint ridges diverge from the nucleus toward the dorsal limb, extending about one-third of the distance, and dividing the elevated portion of the opercule into three nearly equal parts ; the middle of the dorsal limb shows very little flattening on approaching the margin, but the lines of growth become there more distinct ; on the ventral limb the striæ of growth are still more distinct, and this limb is usually somewhat bowed upward along the middle. A groove, broadening toward the margin, extends from behind the nucleus on each side to the lateral angle. The operculum has a diameter of 16 mm.

When the ventral limb is broken off, owing to the smoothness of the central area, this operculum is apt to be mistaken for an Obolelloid brachiopod.

The tubes of this species not infrequently contain those of smaller individuals of the same species or of Orthotheca, and more rarely shells of small gasteropods are found within them.

In view of the antiquity of the fauna, of which *H. excellens* forms a part, the changes which the shell underwent during growth are of interest to the biologist, as they show that already the genus Hyolithes had passed through some important changes of structure.

We have already mentioned the fact that there was a transfer of a portion of the dorsal side to the ventral surface during the growth, but this transfer was not so entire as to make the transferred area invisible from the dorsal side, for from that side it is slightly in view. Still it is clear that this shell is to be classed in Holm's section Magnidorsati, the more advanced of the two groups into which Holm divides the Hyolithes (sens. strict.). This shell then began its growth as an Equidorsatus and ended as a Magnidorsatus, and this will probably be found to have been the case with many of the Magnidorsati. It would appear then that we have not reached the original fauna of Hyolithes in which only Equidorsati are known. This is to be looked for further down in the Etcheminian, or even perhaps in some older system of rocks.

In its younger condition this species was characterized by a more prominent lip and by more strongly arched striæ on the dorsal side, than at later stages of growth. The young, therefore, approached somewhat nearer to *Hyolithes Billingsi* in form, and it is possible that there may be a small species of Hyolithes of this form present in the limestone at Smith Sound which the material on hand has not enabled us to discriminate.

Operculum of young ?

One fact which lends countenance to this idea is that an operculum of small size occurs here, which differs in form from that of *H. excellens*.

This operculum has the ventral limb sharply upturned at about a right angle and has the nucleus about one quarter of the width from the ventral side ; from the nucleus two grooves spread toward the lateral edges, widening as they go ; in front of the nucleus and of these grooves is a subtriangular elevated area, extending to the margin on the dorsal side. On the external surface of the operculum obscure concentric lines of growth are visible with a lens. The length of the operculum is 5 mm., and the width 4 mm.

Hyolithes rugosus (Pl. VII., figs. 4*a* and *b*).

Hyolithes rugosus, Nat. Hist. Soc. N.B., Bull. xviii., pl. iii., p. 194, figs. 4*a* and *b*.

A small slender species having the dorsal side flatly rounded transversely ; and having a gentle, convex curve lengthwise. The taper of the tube is about 1 to 3, and the apical angle about 15°. The tube is chambered about 3 mm. from the apex.

Sculpture.—The ventral side is marked by prominent ribs which are closely set on the lower part of the tube (about 6 to 1 mm.), but in the upper fifth are more distant (2½ to 1 mm). The whole surface carries a minute granulation. The dorsal surface is unknown.

Size.—Length 11 mm. Width about 3½ mm. Depth from dorsal to ventral side 2 mm. Infrequent.

Mr. Walcott described an object similar to this, but of only half the length (*Hyolithellus micans* var. *rugosa*) from several localities in the Cambrian slates of Washington County, N.Y. It differs in having a longitudinal striation between the transverse ridges, where this species has a granulated surface.

CRUSTACEA.

APTYCHOPSIS, Barrande.

Among the rarer fossils of the Smith Sound limestone are a few valves of crustaceans that appear to belong to the above genus, or an allied one.

Aptychopsis terranovicus (Pl. VII., fig. 5).

Aptychopsis terranovicus, Nat. Hist. Soc. N.B., Bull xviii., p. 195, pl. iii., fig. 5.

Only the right valve known ; this is oval lenticular in shape, the widest part being one-third from the anterior end. The hinge-line has a strong fold which is more than two thirds of the whole length of the shield. From the front of the hinge-line the border runs with a slightly convex arch to the anterior end. At about the middle of this part of the

border the surface of the shield is somewhat depressed, and behind the depression are two slight elevations. The anterior end projects forward and is sharply rounded. From this end the lower border runs with a regular curve to the posterior border, whence to the fold or hinge-line the border becomes straighter. There appears to be the broken base of a spine at this posterior angle. From the anterior to the posterior angle a marginal groove runs along the lower border of the shield.

Sculpture.—The surface of valve is granulated, but shows traces of grooving concentric to the anterior end of the hinge-line. There is a row of shallow pits in the hollow behind the cardinal fold, consequent on these growth-lines or groovings.

Size.—Length, $3\frac{1}{2}$ mm.; width at anterior end of the hinge-line 2 mm. Rare.

mut. ARCUATA (Pl. VII., fig. 6).

A. terranovicus mut. *arcuata*, Nat. Hist. Soc. N.B., Bull. xviii., p. 195, pl. iii., fig. 6.

A variety of the above, or another species, has a shorter and more tumid valve, and a rounder curve at the anterior end. The hollow between the main swelling of the valve and the axial fold is crossed by four ribs parallel to the posterior border; the anterior of these folds is the posterior border of a low crescentic area which curves downward and forward toward the anterior end of the valve; a low ridge extends from the anterior end of the axial fold across this area to the middle of the posterior border.

Sculpture.—The surface of the shield is granulated.

Size.—Length, 3 mm.; width, $1\frac{1}{2}$ mm. Rare.

In conclusion I may add that my warm thanks are due to Mr. J. P. Howley for information in reference to Smith Sound and its geology, as well as for permission to use his section of the north shore of that sound.

And my cordial acknowledgments are also due to Mr. Gilbert van Ingen, the curator of the museum in Columbia University, New York, for copies of the original figures and description of *Palæacmæa typica*, upon which the genus Palæacmæa was founded, and which is related to a genus I have found to be present in this ancient fauna. I wish also to acknowledge my obligation to Dr. R. T. Jackson, of the Museum of Comparative Zoology, Cambridge, Mass., in having procured for me a copy of Shaler and Foerste's article on the Cambrian Fauna of Attleboro', Mass.

DESCRIPTION OF PLATES.

Plate I.

(Mount Stephen Fauna).

Fig. 1.—*Urotheca flagellum*, n. gen. et sp.—*a*, complete example—*b*, a larger tube, apex broken. Both nat. size.—*c*, a portion magnified to show the transverse growth lines. Mag. $\frac{5}{1}$. **See p. 40.**

Fig. 2.—*Byronia annulata*, n. gen. et sp.—*a*, complete tube. Nat. size.—*b*, portion magnified to show the sculpture, Mag. $\frac{4}{1}$. **See p. 42.**

Fig. 3.—*Orthotheca corrugata*, n. sp. Tube, ventral side, apex broken. Mag. $\frac{3}{1}$. **See p. 42.**

Fig. 4.—*Hyolithes*, sp. Tube, ventral side chambered at the apex. Mag. $\frac{2}{1}$. **See p. 43.**

Fig. 5.—*Hyolithes carinatus*, n. sp.—*a*, tube, ventral side.—5*b*, operculum mould of the interior. Both mag. $\frac{2}{1}$. **See p. 42.**

Fig. 6.—*Agnostus montis*, n. sp. Complete example. Mag. $\frac{3}{1}$. **See p. 43.**

Fig. 7.—*Ptychoparia cordilleræ*, Roem.—*a*, head and seven segments, cheeks somewhat displaced. Mag. $\frac{3}{1}$.—*b*, pygidium. Mag. $\frac{4}{1}$. **See p. 44.**

Plate II.

(Mount Stephen Fauna).

Fig. 1.—*Neolenus granulata*, n. gen. and sp.—*a*, complete example half grown.—*b*, head-shield, middle piece, full size.—*c*, hypostome found with this species. All nat. size. **See p. 55.**

Fig. 2.—*Dolichometopus occidentalis*, n. sp. Young, complete test. Mag. $\frac{4}{1}$. **See p. 49.**

Fig. 3.—*Corynexochus Roemingeri*, Matt.—*a*, middle piece of the head. Mag. $\frac{4}{1}$.—*b*, same in profile. **See p. 47.**

Fig. 4.—*Conocephalites*, cf. *perseus*, Hall. Middle piece of the head-shield, (the left anterior corner is restored). Mag. $\frac{4}{1}$. **See p. 46.**

Fig. 5.—*Bathyuriscus pupa*, n. sp. Complete, except the movable cheeks. Mag. $\frac{3}{1}$. **See p. 51.**

Plate III.

(Nos. 1 and 2 Mount Stephen, Nos. 3 to 6 Newfoundland Cambrian).

Fig. 1.—*Dorypyge Dawsoni*, Walc. Complete (except the genal spines). Nat. size. **See p. 56.**

Fig. 2.—*Oryctocephalus Walkeri*, n. sp. Restored, middle piece from an individual 14 mm. long ; thorax and movable cheeks from one 10 mm. long ; pygidium from one $4\frac{1}{2}$ mm. long. The body, etc. Mag. $\frac{3}{1}$. **See p. 60.**

Fig. 3.—*Obolella atlantica*, Walc. Ventral valve. Young. Mag. $\frac{10}{1}$. **See p. 76.**

Fig. 4.—*Raphistoma* (?) *Kelliensis*, n. sp.—*a*, viewed from above.—*b*, from the side. Nat. size. **See p. 76.**

Fig. 5.—*Hyolithes Hathewayi*, n. sp.—*a*, ventral view of a tube partly exfoliated.—*b*, dorsal view of a more complete tube.—*c*, operculum. All nat. size.—*d*, group of tubes. Reduced $\frac{1}{4}$. **See p. 79.**

Fig. 6.—*Microdiscus bellimarginatus*, Shaler and Foerste.—*a*, head-shield.—*b*, pygidium. Both mag. $\frac{2}{1}$. **See p. 81.**

PLATE IV.

(Newfoundland—1, Olenus Fauna; 2–7, Protolenus Fauna; 8 and 9, Paradoxides Fauna).

Fig. 1.—*Arenicolites antiquatus*, Bill.—*a*, a group of casts of three galleries (after Billings).—*b*, section showing gallery and connected pits. Both nat. size. **See p. 77.**

Fig. 2.—*Agraulos* (*Strenuella*) *strenua*, Bill.—*a*, middle piece of head-shield.—*b*, same from the side. Nat. size. **See p. 82.**

Fig. 3.—*Agraulos* (*Strenuella*) *robusta*, n. mut. Nat. size. **See p. 82.**

Fig. 4.—*Agraulos* (*Strenuella ?*) *Attleborensis*, mut. *vigilans*, n. mut.—*a*, middle piece of the head-shield. Mag. $\frac{5}{1}$.—*b*, same in profile.—*c*, type of the species after Shaler and Foerste. (Mag. $\frac{1}{1}$?). **See p. 84.**

Fig. 5.—*Micmacca Walcotti*, n. sp.—*a*, middle piece of the head-shield.—*b*, movable cheek.—*c*, same from inner side.—*d*, a pleura. All nat size.—*c*, pygidium. Mag. $\frac{2}{1}$. **See p. 85.**

Fig. 6.—*Micmacca angimargo*, n. sp. Middle piece of head-shield. Mag. $\frac{2}{1}$. **See p. 86.**

Fig. 7.—*Avalonia plana*, n. sp. Middle piece of the head-shield. Mag. $\frac{2}{1}$. **See p. 87.**

Fig. 8.—*Conocoryphe* (*Atops*) *trilineatus*, Emmons. Head-shield and eight segments of the thorax. Nat. size. **See p. 95.**

Fig. 9.—*Conocoryphe* (*Erinnys*) *breviceps*, Ang. Head-shield and six joints of the thorax. Mag. $\frac{2}{1}$. **See p. 97.**

PLATE V.

(Etcheminian Fauna).

Fig. 1.—*Obolella* cf. *chromatica*, Bill. Ventral valve. Mag. $\frac{3}{1}$. **See p. 97.**

Fig. 2.—*Kutorgina granulata*.—*a*, ventral valve.—*b*, dorsal valve. Both mag. $\frac{3}{1}$.—*c*, mould of interior of dorsal.—*d*, hinge line of ventral. Both mag. $\frac{6}{1}$. **See p. 98.**

Fig. 3.—*Randomia Auroræ*.—*a*, side view of the shell restored from two examples. *b*, the same from above.—*c*, an example showing the back of the cone. All nat. size. **See p. 100.**

Fig. 4.—*Platyceras transversum*.—*a*, seen from the side.—*b*, seen from above. Both mag. $\frac{3}{1}$. **See p. 101.**

Fig. 5.—*Platyceras radiatum*.—*a*, seen from the side.—*b*, seen from above. Mag. $\frac{4}{1}$. **See p. 102.**

Fig. 6.—*Platyceras cymbula*.—*a*, seen from the side.—*b*, seen from above. Mag. $\frac{4}{1}$. **See p. 102.**

Fig. 7.—*Modiolopsis thecoides*.—*a*, right valve.—*b*, section of two valves at the hinge.—*c*, section near the posterior end. All mag. $\frac{4}{1}$. **See p. 103.**

Fig. 8.—*Urotheca pervetus*. Distal end of tube. Nat. size. **See p. 106.**

g. 9.—*Hyolithellus* (?) *flexuosus*. Proximal and middle parts of the tube. Mag. $\frac{6}{1}$. **See p. 110.**

PLATE VI.

(Etcheminian Fauna.)

Fig. 1.—*Hyolithellus micans* (pars), Billings.—*a*, two tubes parallel.—*b* and *c*, groups of diverging tubes. All mag. $\frac{2}{1}$.—*d*, tubes in association with those of *Orthotheca bayonet*. Nat. size. **See p. 109.**

Fig. 2.—*Coleoides typicalis*, Walc. Portion of the tube. Mag. $\frac{10}{1}$. **See p. 111.**

Fig. 3.—*Orthotheca stiletto.*—*a*, upper two-thirds of tube.—*b*, outline of the aperture. Both mag. $\frac{4}{11}$. **See p. 113.**

Fig. 4.—*Orthotheca pugio.*—*a*, Tube, distal half, ventral side.—*b*, form of the aperture.—*c*, transverse section in the middle.—*d*, side view of young tube. —*e*, operculum supposed of this species. All mag. $\frac{2}{1}$. **See p. 111.**

Fig. 5.—*Orthotheca sica.*—*a*, distal part of tube, ventral side.—*b*, outline of aperture—*c*, a rounder variety, ventral side.—*d*, form of aperture.—*e*, an operculum, perhaps of this species. All mag. $\frac{2}{1}$. **See p. 112.**

Fig. 6.—*Orthotheca sica* var. *quadricostata.*—*a*, distal part of tube, ventral side.—*b*, form of the orifice. **See p. 113.**

Fig. 7.—*Helenia granulata.*—*a*, side view of the tube.—*b*, view from above. Both mag. $\frac{2}{1}$.—*c*, section of this tube, mag. $\frac{4}{1}$.—*d*, portion of tube near aperture, mag. $\frac{2}{1}$.—*e*, section of same, mag. $\frac{4}{1}$. **See p. 107.**

PLATE VII.

(Fig. 2 Mount Stephen Fauna, the rest Etcheminian).

Fig. 1.—*Orthotheca bayonet.*—*a*, tube showing the ventral side.—*b*, tube, distal part, dorsal side. Both nat. size.—c, young tube side view showing the curve.—*d*, outline of the aperture.—*e*, transverse section of young tube.—*f*, section of distal part of tube showing the apical angle.—*c*, *d*, *e* and *f*. Mag. $\frac{2}{1}$. **See. p. 114.**

Fig. 2.—*Urotheca parva*, n. sp. Chitinous tube with larval tube attached. Mag. $\frac{3}{1}$. **See p. 41.**

Fig. 3.—*Hyolithes excellens*, Bill.—*a*, dorsal view.—*b*, side view.—*c*, form of aperture.—*d*, section in the equidorsatal part of the tube.—*e*, operculum.—*f*, same in profile. All nat. size.—*g*, side view of young operculum.—*h*, operculum of young or of another species.—*i*, same in profile. The three last mag. $\frac{3}{1}$. **See p. 115.**

Fig. 4.—*Hyolithes rugosus.*—*a*, tube showing dorsal side.—*b*, side view of tube. Both mag. $\frac{3}{1}$. **See p. 118,**

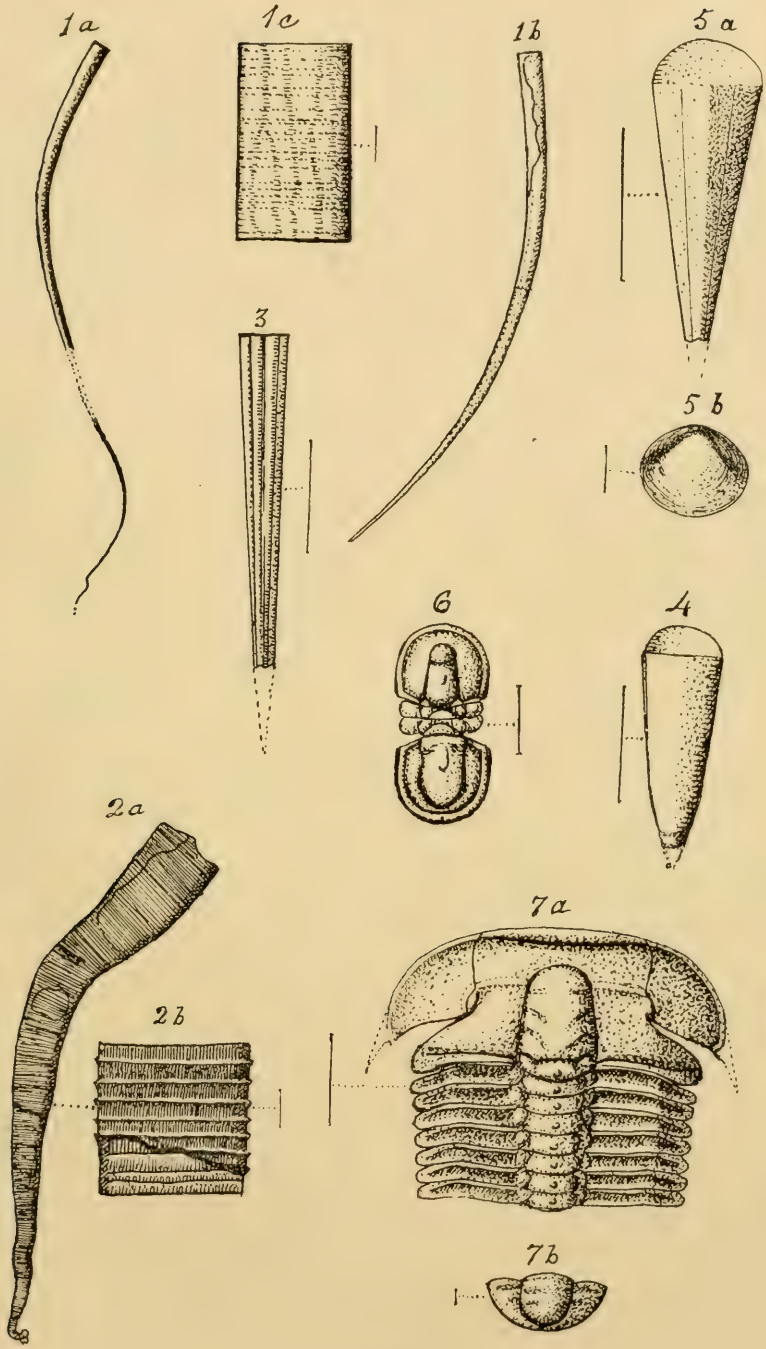
Fig. 5.—*Aptychopsis terranovicus.* Side view of right valve. Mag. $\frac{4}{1}$. **See p. 118.**

Fig. 6.—*A. terranovicus*, mut. *arcuata.* Mag. $\frac{4}{1}$. **See p. 119.**

PLATE VIII.

(Protolenus Fauna).

Fig. 1.—*Metadoxides magnificus*, Matt.—*a*, restoration from parts. The head and thorax from actual examples ; the thorax restored.—*b*, a ring of the thorax showing the sculpture and broken axial spine.—*c*, a pleura showing the surface markings of the under side.—*d*, a smaller pleura from the inside.—*e* a portion of the genal spine to show the diagonal raised lines. All nat. size. **See p. 89.**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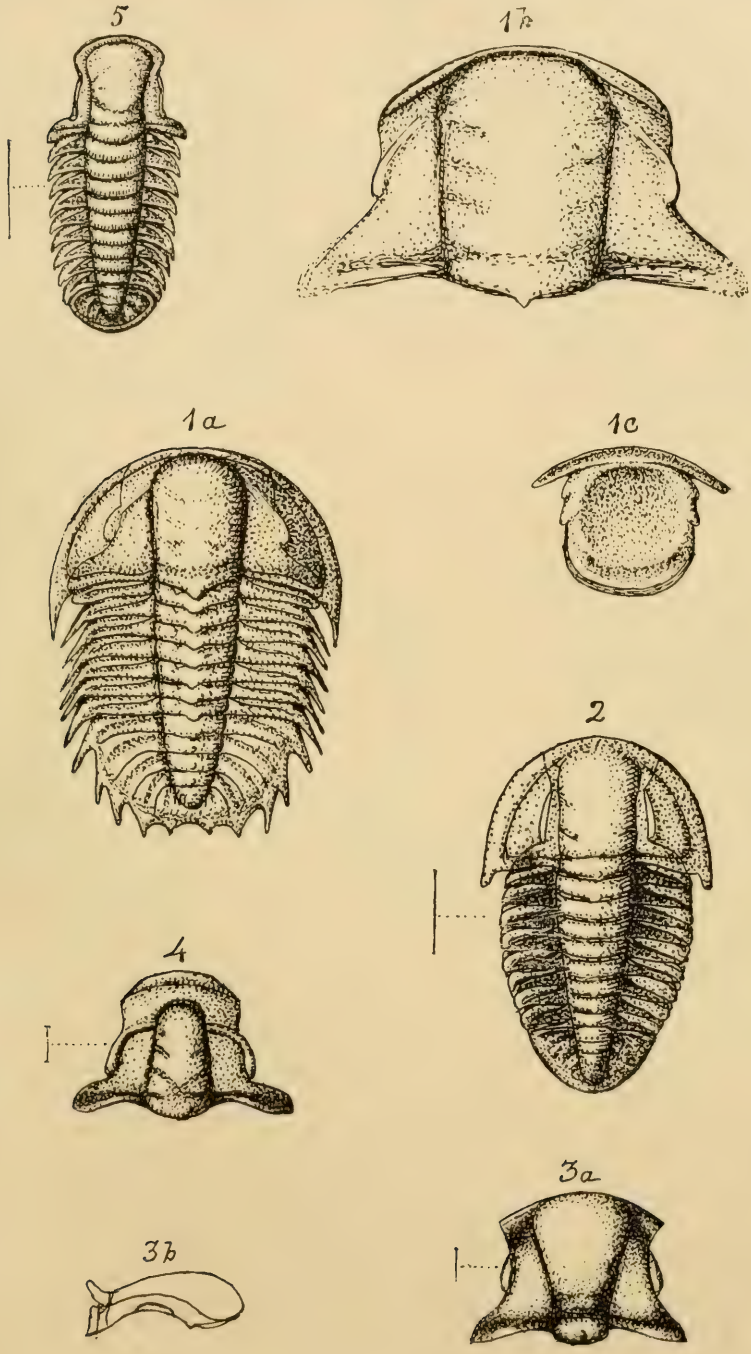
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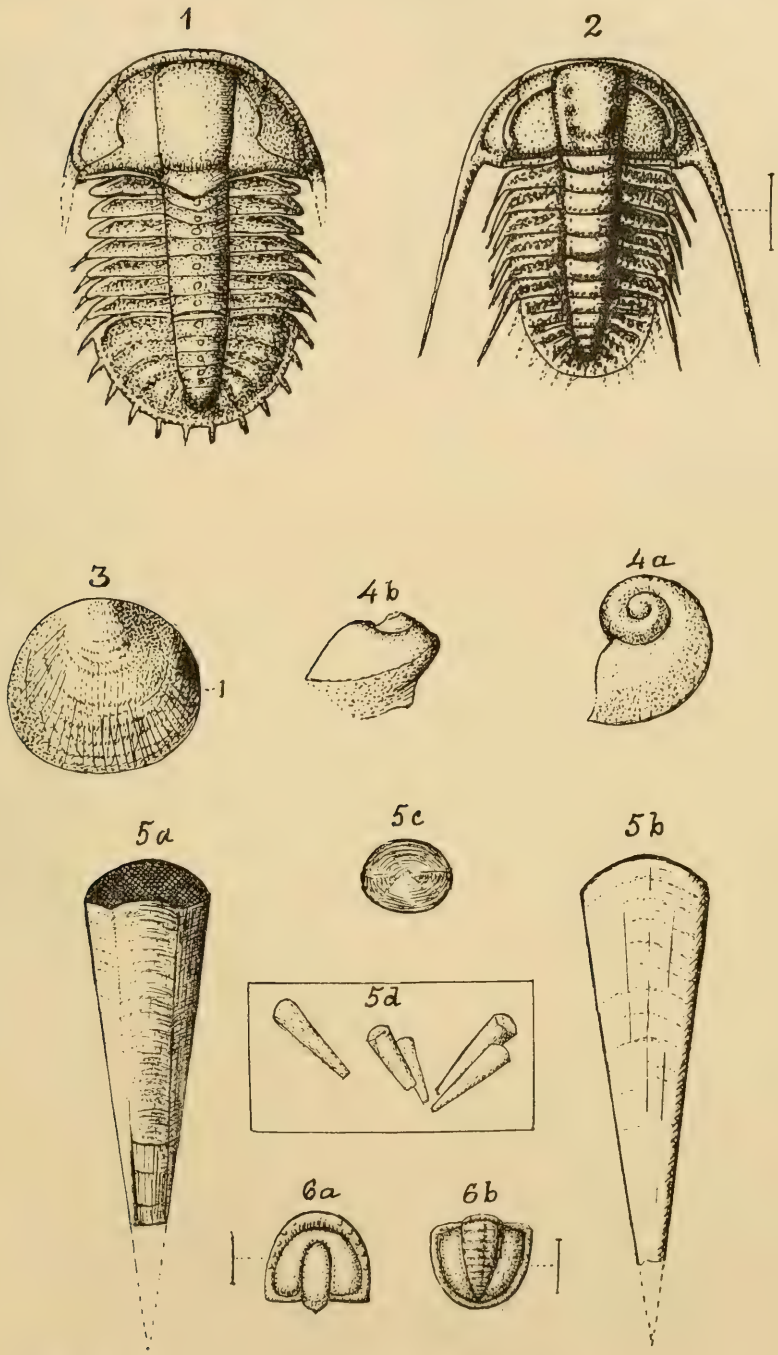
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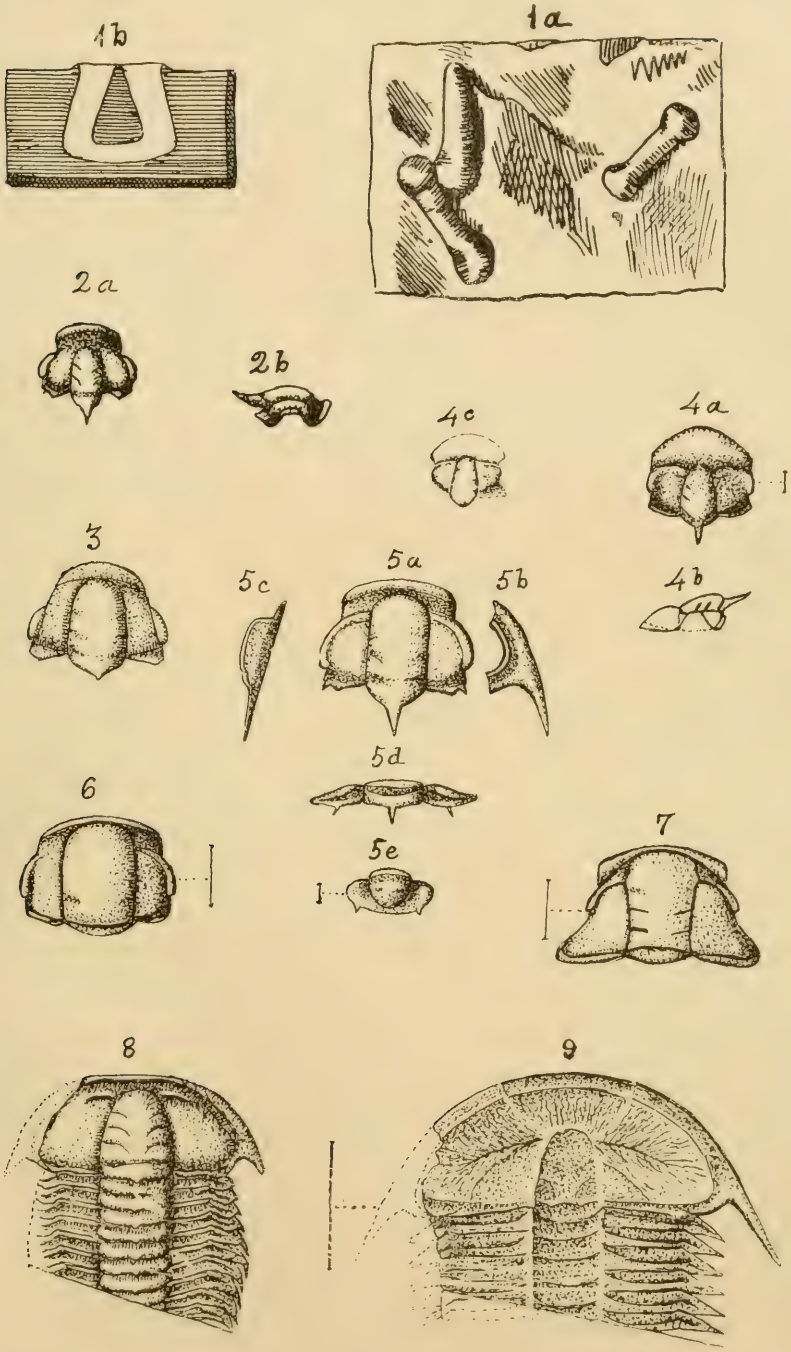
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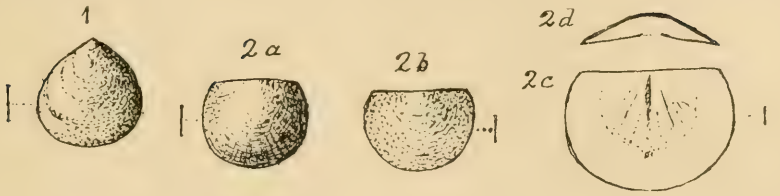
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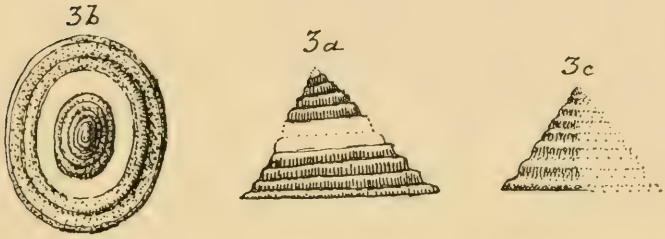
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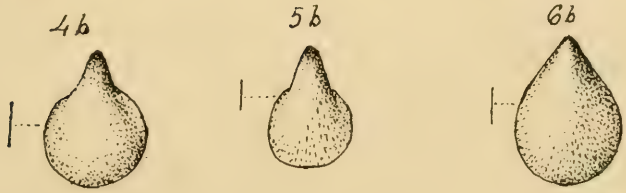
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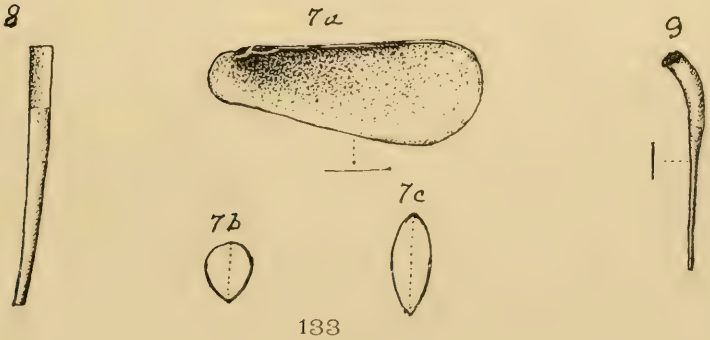
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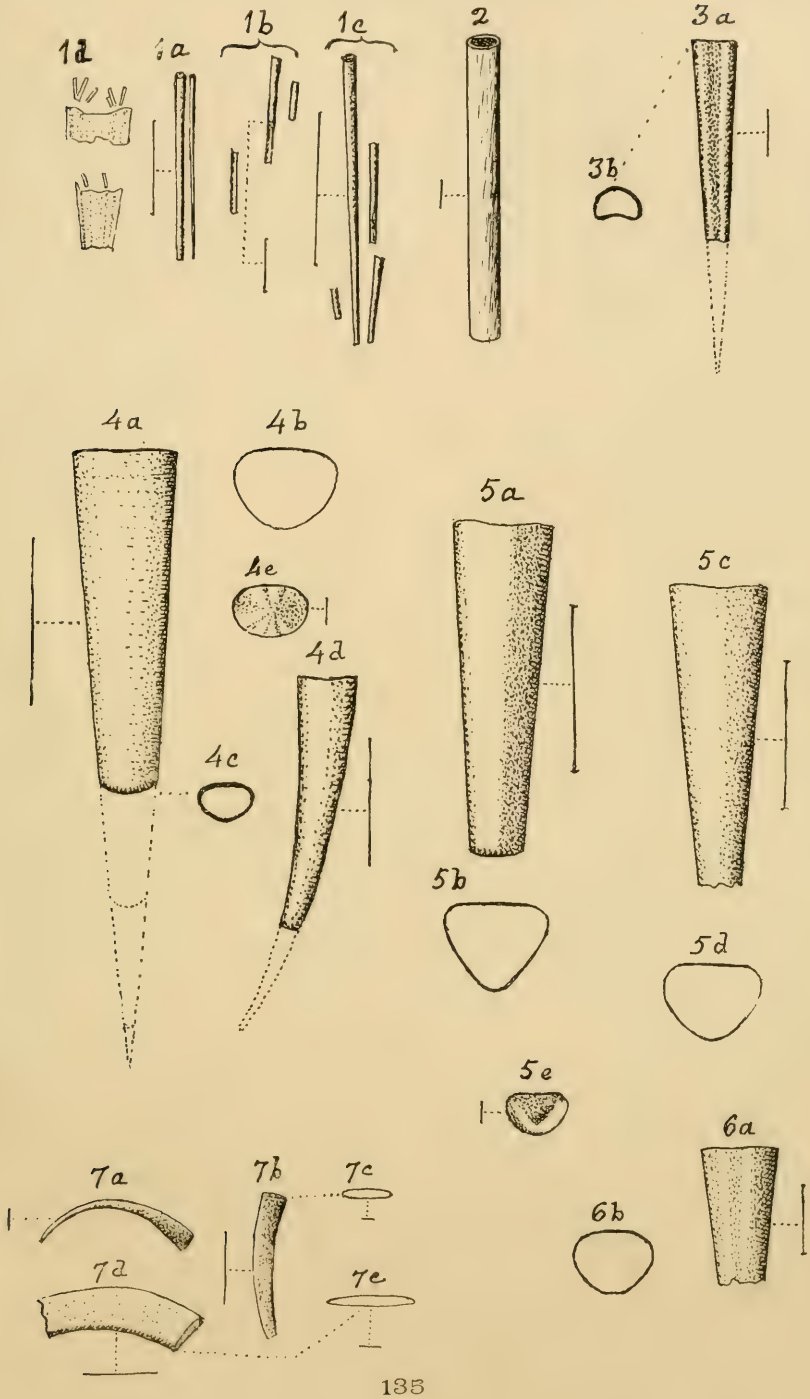
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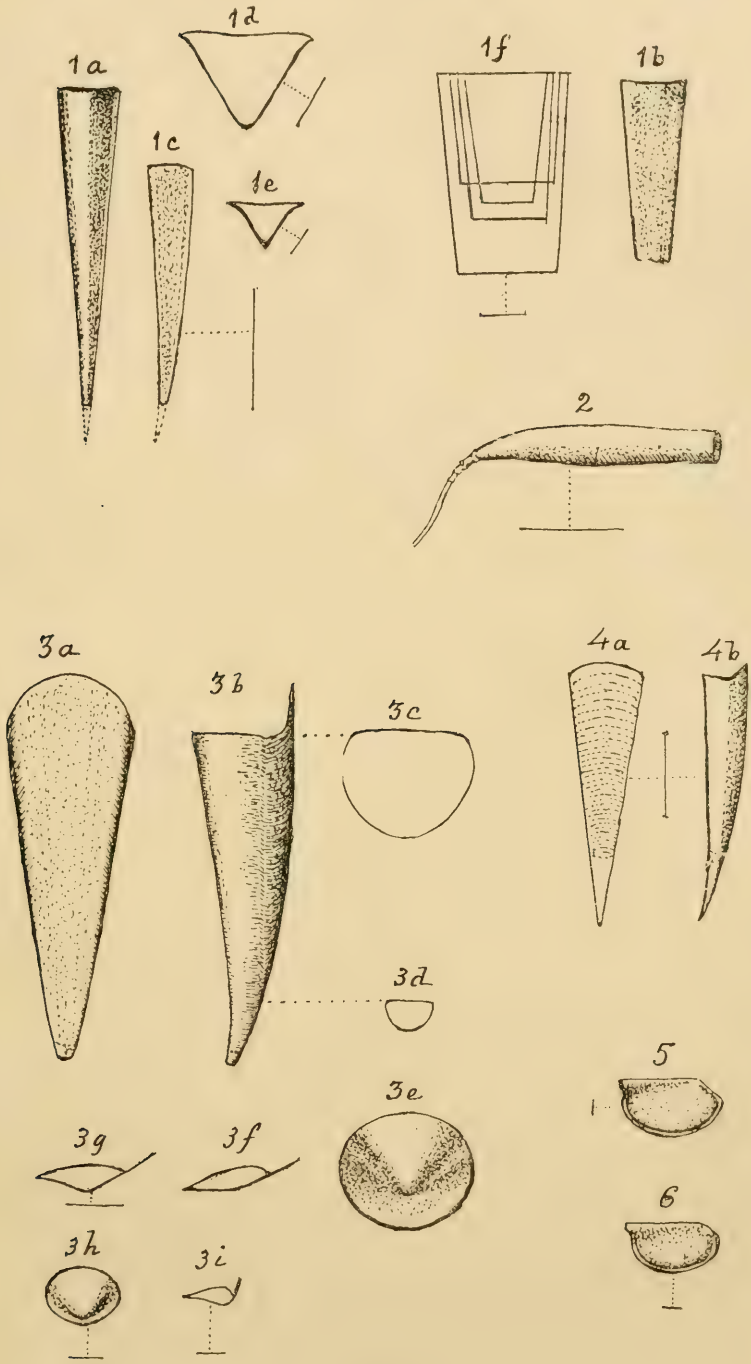
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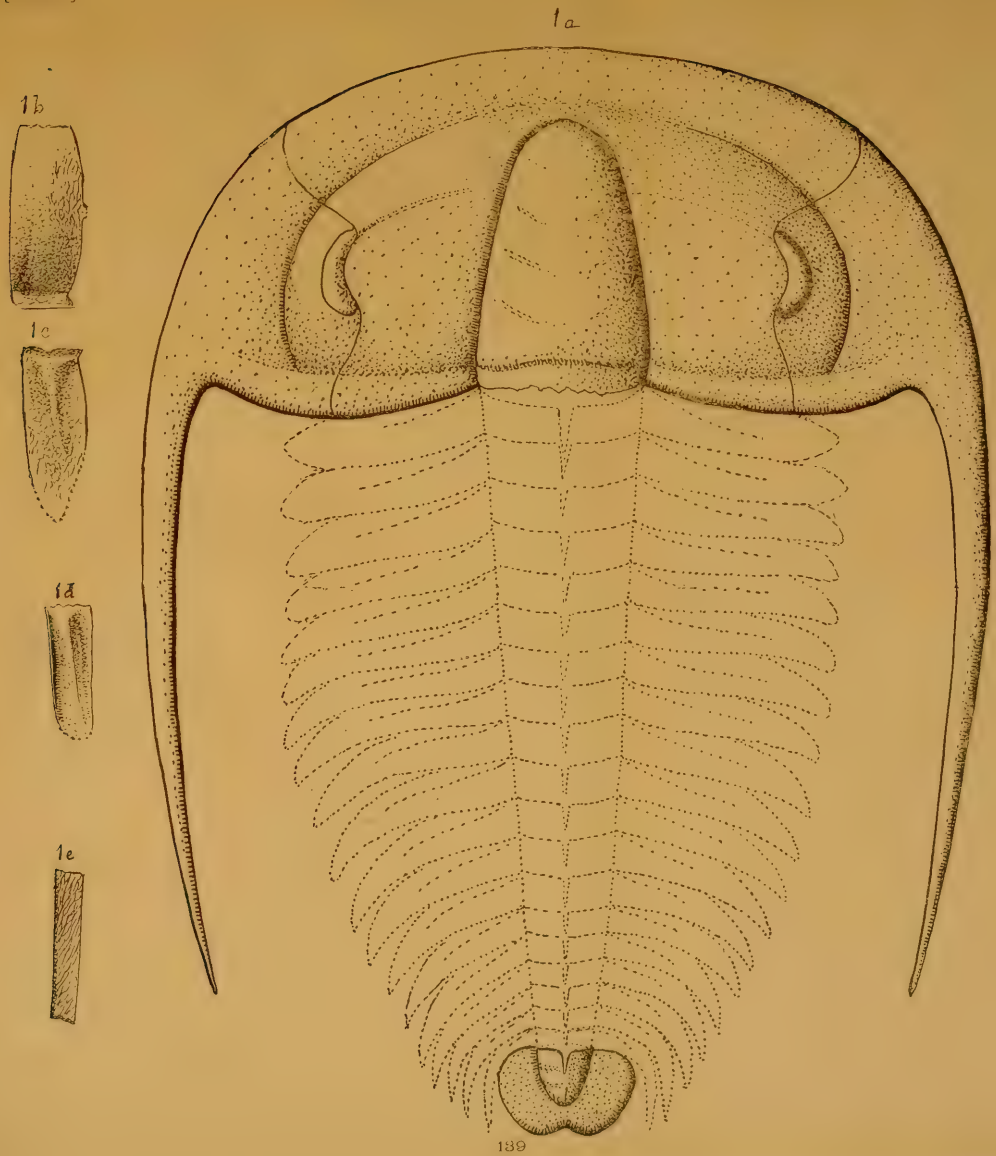
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V.—*Fresh water Fishes and Batrachia of the Peninsula of Gaspé, P.Q., and their distribution in the Maritime Provinces of Canada.*

By PHILIP COX, PH. D.

(Presented by Prof. J. Macoun, and read May 26th, 1899.

A glance at the map will suggest many reasons, and reflection on its geological history even more, for including the Quebec slope at least of the Baie des Chaleurs with New Brunswick, Prince Edward Island, and much of Nova Scotia in one maritime biological province, the unity of which is marked not so much by the occurrence of peculiar forms, as by the general similarity of the flora and fauna. Portions of this region, it is true, differ much in the extremes of heat and cold, snow-fall, length of winter and other physical aspects, but the average annual temperature is nearly the same throughout ; and hence the adaptive power of most plants and lower vertebrates, found anywhere within it, enables them to spread over and occupy the whole of the province. But while the means plants make use of for their dispersal are various, and effective enough to account for their presence here and there, and while batrachia possess ample powers for the same purpose, it is altogether different in the case of fresh-water fishes, the study of whose distribution often presents problems not to be solved by a knowledge of their life-history nor existing physical conditions. Especially is this the case with regard to rare species, occurring at remotely isolated stations over an immense area. Forced by the logic of facts to reject the usual theory, and recognizing the great antiquity of the fish, the student in ichthyology prefers to find an explanation of these phenomena in the evidence of a different relation of the land and water surfaces to each other at different epochs in the world's history. In this view isolated colonies are regarded as the remnants of an ancient and widely distributed race, which, in favourable environments, have here and there survived the great changes that elsewhere engulfed their kind. A few interesting examples of this nature are met with in Gaspé and on the Bay of Fundy coast, and will be discussed at length in their proper place.

Though the average annual temperature of all parts of the coast region of this biological province may be nearly the same, yet the summer, and probably also the winter, temperature of the Gaspé rivers is much lower than what obtains in the rivers of New Brunswick and Nova Scotia, due to the former rising in the Notre Dame Mountains,

and being fed by cold alpine streams. They are, too, more rocky, rapid, and boisterous, especially in their upper courses, and afford only in the lower stretches, and in brooks and ponds near their mouths, the degree of quietness and heat most fresh-water forms, notably our cyprinids, require. In the examination of these rivers a gradual decrease in the number of species and individuals is also observed as one goes eastward, and eventually all purely fresh-water forms disappear, not one being met with in the Grand, York, or Dartmouth rivers. The cause does not seem to be in the rivers themselves, for in character and temperature, in the presence of warm ponds and lakes in their lower valleys, they are similar to the others. The fact, however, may be accepted as evidence of the small part birds and other accidental means play in the diffusion of fish-life, and as confirming in part the theory which ascribes the presence of certain small fishes in the upper rivers to an ancient eastward extension of the Restigouche.

Catostomus commersoni, Lac. Big-scaled sucker. Carp (French).

A widely distributed and variable form, occurring in the Grand Cascapedia, Little Cascapedia, and Bonaventure rivers. Common also in New Brunswick and in Nova Scotia (J. M. Jones).

While the stock of the Restigouche, including the Metapedia, and all New Brunswick waters often shows a reduction in the typical scale formula (10-65-9) and a lack of regularity in the labial papillæ, the deviation from the scale formula is more marked and constant among the Gaspé fish. Here it is 9-60-7, a divergence not at all important so far as the number of transverse series (60) is concerned ; but the decrease in the longitudinal rows is significant ; for, as the fish are robust and attain a length of eighteen inches, the scales are relatively larger. Were this form, however, derived from typical *commersoni*, variation of an opposite character might be looked for, as the genesis, size, and arrangement of the scales are more or less correlated with the degree of bodily activity life in a given medium requires ; so that a reduction in the size, but an increase in the number is the usual result of active movements, rapid currents, low temperature, and alpine or northern distribution. The ancestors of this sucker may have been of lacustrine habit, and closely related to *commersoni*. It was a disappointment not to find in the Gaspé rivers *C. longirostris*, LeSueur, the Long-nosed, or Northern, Sucker, not uncommon in the St. John river, N.B.; nor does it seem to occur in the Restigouche or Metapedia.

CYPRINIDÆ.

Leuciscus cornutus, Gnthr. Red-fin.

This attractive, well-known, but variable little cyprinid was found in small numbers in brooks, emptying into the Grand Cascapedia near its mouth, the only station in the peninsula. It is generally distributed in New Brunswick, and occurs also in the Metapedia, but the Cascapedia form is a well-marked variety, deserving recognition as a boreal type. The size is small, barely four inches in length ; coloration brilliant, with the two commonly evanescent lateral golden bands very distinct in life, and visible after months of immersion in spirit ; the scale formula shows a slight increase, with 27 in front of the dorsal, while the New Brunswick and Metapedia shiners have from 16 to 22. The anal fin-rays are 8 instead of 9, and the free margin of the dorsal is straight or slightly convex, not concave, due to a shortening of the anterior rays, which, when the fin is depressed, about equal the posterior. As will, however, be pointed out subsequently, the latter, aside from more important differences, cannot be regarded as a modification of much significance or value. Caudal peduncle slender. All the fins, including chin and throat, scarlet.

Notemigonus chrysoleucus, Jor. Golden Shiner.

Like the last, this species was found in but one river valley in Gaspé, that of Grand Pabos, where it occurs in two small bodies of water near the coast, known as Lac à Canard and Murphy's Lake. It is in all respects typical except that the anal fin-rays are *12* instead of *13*, but this variation is not uncommon among New Brunswick specimens. Occurs also in Metapedia river and lake.

This was the only fresh-water fish found on P.E. Island by Roy McLean Vanwart of Fredericton and the writer in 1896, while making an investigation of its batrachia and fishes. It was collected from Afton Lake, near Mount Stewart, and agrees with the Gaspé specimens in having 12 rays in the anal fin. No information could be had of the time nor manner of its introduction, nor was its presence known to the people living in the vicinity. As the lake is only a few acres in extent, without affluents, and with an outlet only during spring freshets, it is just possible that some admirer of this handsome fish planted it here long ago. Let this be as it may, the general absence of the small fresh-water fishes from an island so convenient to the coasts of New Brunswick and Nova Scotia, and lying in the general line of bird migration, argues strongly against the theory of the dispersal of fishes through

the agency of birds. Even where lakes and ponds belonging to different basins are made the summer home of fish and ova-eating birds, the results do not appear to be different. In New Brunswick the St. John river with its numerous branches and lakes seems favourably disposed in this respect to receive forms from the contiguous head-waters and lakes of the Androscoggin and other Maine rivers ; but there is no proof of transmission by such means having occurred. It is true that twenty odd years ago, the Eastern Pickerel, *Esox reticulatus*, LeS., a common fish in the Maine rivers, made its appearance in the St. John, but inquiry revealed the fact that a few years before it had been artificially introduced into the Meduxnakik, a branch of the St. John. Hence it would seem more scientific to seek an explanation of the phenomena of distribution Gaspé presents, in some general and far-reaching cause, than to have recourse to a theory which seems inadequate to account for the facts.

Semotilus atromaculatus, Mitch. Horned Dace.

This species was found in small numbers in the Grand Cascapedia, Little Cascapedia, and New Carlisle lakes, but does not attain the size it reaches in New Brunswick. Moreover, it presents some variations from the usual type characters, especially in the more pointed muzzle, and the increased number of dorsal fin rays, which are *eight* instead of *seven*. The latter at least is a modification characteristic of the influence of a highland habitat, for mountain forms usually show an increase in these bony supports. The dace is partial to small streams and the upper courses of rivers, where it mingles with the Black-nosed Dace, *R. atronasus et cataractæ*, and hence is liable to pass from one river system to another, and attain in time a wide and continuous distribution. Common in all the waters of New Brunswick.

Phoxinus neogaeus, Cope. Minnow.

In Bull. No. XIII., Nat. Hist. Soc. of New Brunswick, pp. 44-7, will be found the first record of the occurrence of this little cyprinid on the Atlantic slope of North America. It was taken by the writer from a pond in the valley of the St. John at Maugerville, Sunbury Co., and submitted to Dr. B. E. Bean, of the National Museum, Washington, who identified it as this species. The writer subsequently collected it from several small lakes near the mouth of the river in the vicinity of St. John (Dark Lake, Water-works Lake, McDonald Lake); but, though carefully sought after, it has not been found at any other station in the

province. Previously its only records had been the Saginaw and Grand rivers, Michigan, and the Baraboo river, Wisconsin. As great activity has characterized ichthyological research in recent years, the lack of any further stations for this species being recorded might be accepted as proof of its rarity, and lend additional interest to the isolated and discontinuous character of its known distribution. But the occurrence here of this western (?) form, however interesting, was no surprise, as it was only an addition to certain facts which suggest a recent and more intimate relation between the fauna and flora of these sections ; for it has long been known that many plants of western range are indigenous to the upper St. John, and that some small mammals, notably *Sorex richardsoni*, Bachman, not elsewhere reported east of Manitoba, are quite common in the valley of that river. (See Bull. No. XIV., Nat. Hist. Soc. of New Brunswick, p. 53-4.) It was, however, a genuine surprise to meet with this *Phoxinus* on the Gaspé coast, where it occurs in a small lake near New Carlisle, associated with another equally interesting and rare form of western and southern range, *Chrosomus erythrogaster*, Ag.

In New Brunswick the waters frequented by *Phoxinus* are generally free from predaceous fishes except perhaps *Anquilla rostrata*, LeS., and *Gasterosteus pungitius*, L., and its Quebec station is quite similar in this respect, so that the brightly coloured and otherwise attractive minnow may, in part, owe its preservation here and there to this cause.

It varies considerably, the stock of one lake being easily distinguished from that of another, not alone by size and coloration, but by certain structural differences. The Dark Lake fish are the smallest known to the writer, never exceeding two and three-quarters inches in length, whereas in McDonald Lake they are twice as long, the largest on record. The former, too, have the anal fin mostly 9-rayed ; the dorsal insertion more posterior by two-thirds the length of the caudal ; branchial leaflets oblong and stouter ; gill-rakers shorter, less acute and with broader bases ; snout shorter and blunter ; lateral line relatively longer, and the band on the side intensely black in life, and forming a conspicuous patch on the operculum.

The Gaspé *Phoxinus* is very close to the larger New Brunswick forms, being about four inches in length ; but the dorsal and anal are more pointed, the pectorals longer, and muzzle more acute. The dentition, however, is very irregular. In New Brunswick the females, strange to say, are more rosy in the breeding season than the males.

Chrosomus erythrogaster, Ag. Red-bellied Dace.

This species was reported from New Brunswick by the writer in the article referred to under *Phoxinus*, as occurring in Clear Lake, Lepreau,

St. John Co., a body of water only a few acres in extent with a little outlet into the Bay of Fundy near by, and having no connection with any river system. A year after he found it in a pond near Golden Grove, nine miles from St. John, and there remained, so far as he knows, its only Canadian records until August last, when he collected it from a few small lakes in the valleys of the Grand and Little Cascapedia, and from the Nouvelle lakes, near New Carlisle, P.Q., where it was associated with *P. neogæus*. Its distribution, too, recalls that of the latter, for it is reported from Michigan and a few points in the upper part of the Mississippi basin, and recently from Freeport, near Portland, Maine, by W. C. Kendall and Hugh M. Smith (Bull. U.S. Fish Commission, 1894, pp. 15-21). *Erythrogaster*, however, has only 7 dorsal rays, while all our *Chrosomi* have *8*, and in this respect, too, the Maine specimens agree, as well as *C. eos*, Cope, from the Susquehanna, its next station to the south, which, however, presents a slightly different colour-pattern (Proc. Acad. Nat. Sci. Phil., 1861).

The Gaspé fish, especially those from the Grand and Little Cascapedia, are somewhat peculiar. The body is more slender and longer in proportion to the head; mouth more oblique; eye large $^2|_3$ in snout; generally *seven* dark longitudinal lines or bands instead of *five*, the two extra ones often well defined in life, one on each side of the vertebral line, but seldom reaching the caudal peduncle; dorsal insertion more posterior. Size small, never exceeding $2\frac{1}{4}$ inches. This variety predominates in Harriman's Lake, Grand Cascapedia, and Goose Lake, Little Cascapedia. The Nouvelle (New Carlisle) dace resemble most those found in New Brunswick in coloration and proportion of parts. While the slender elongate body recalls *eos*, the scale formulæ 82-28 is practically that of *erythrogaster*.

To sum up, the Clear Lake and Golden Grove, N.B., *Chrosomi* are very near to *erythrogaster*, but the Gaspé forms exhibit a divergence so marked and constant as to call for recognition; both are peculiar in the possession of 8 dorsal rays, and to continue to designate them by that name is to ignore the claims of important structural differences. This, however, is a question that can be more satisfactorily dealt with when larger areas have been investigated and more material accumulated.

Ceratichthys Plumbeus, Gunther.

This species was reported first from Loch Lomond, New Brunswick, by the writer in 1893, who subsequently found it at various other stations in the province. Being a hardy northern form, its occurrence in Gaspé

could be expected, where it was observed last summer in the Metapedia river and lake, Grand and Little Cascapedia, Nouvelle (New Carlisle) lakes, and in the basin of the Grand Pabos (Lac à Canard and Murphy's Lake.)

The genus is widely distributed in North America, consisting, however, of only a few closely allied species, whose differentiation is made to rest upon such slight and varying characters as to render the classification a mere recognition of the extremes of varieties, blending with each other through a series of intermediate forms. For the purpose of illustrating this point, it is only necessary to compare with one another the three most dominant northern forms, *C. plumbeus*, Gunther, *C. dissimilis*, Girard, and *C. greeni*, Jordan. The first is our alleged eastern form ; the second peculiar to Lake Superior and the northern and northwestern portion of the Mississippi basin ; the last a recently described species from Fort St. James, B.C. (Bull. Nat. Hist. Soc. of B.C., 1893). The element of chief value, indeed of any value, is the scale formula, which is as follows :—

C. greeni, 10-57-7.

C. plumbeus, 11-65-7 (11-60 to 70-7).

C. dissimilis, 12-68-8.

To one who has been afield, examined hundreds of specimens, and noticed the wide range of variation in this respect among stock of the same place or neighbouring places, the founding of species on such small, inconstant, and largely accidental differences must appear as little else than designating the extremes of variation in a given species. The writer has found *plumbeus* to vary from 10-60-7 to 12-70-8, and hence to comprehend within its limits the three above species, at least as far as this feature—the chief one—is concerned. To the relative height, too, of the dorsal and the form of its free margin is attached some significance in the attempted separation of *dissimilis* from *plumbeus*, the former having the margin nearly straight with anterior rays not produced, the latter with the margin concave and rays produced. When somewhat marked, constant, and associated with other contrasts, the feature would be of some value ; otherwise it should be used with much caution, for it is just in these two respects that fins of the *same* species are often found to differ. Age, sex, season, and nature of summer and winter habitats are modifying causes. Anadromous tribes and fishes of lacustrine habit, resorting to the upper courses of rivers for breeding purposes, exhibit at different seasons a considerable variation in this respect. Our Atlantic salmon is a good example. Under these circumstances there is extra wear or abrasion of the anterior rays and external parts, often materially changing the outline. *Ceratichthys* exhibits all

these modifications. The stock of the Grand Cascapedia, Nouvelle and Grand Pabos have the anterior rays shortened and the margin either straight or more frequently convex, while the lake form from New Brunswick, Lake Metapedia, P.Q., and the Little Cascapedia, shows a concave margin with anterior rays produced. A short description of these two varieties may be given here.

(a) *C. plumbeus*, Gunther.

Size large, heavy anteriorly ; back slightly arched ; head broad and flattish, its profile nearly straight ; dorsal insertion a little anterior to last ray of ventral, midway between front of orbit and base of caudal. Mouth moderate ; barbel evident ; lateral band distinct. Dusky olive above, sides dull silvery, axils of paired fins and angles of mouth red.

Head, $4\frac{1}{2}$; depth, $4\frac{1}{2}$. D. 8, A. 8. Scales 11-62-7. Length about 6 inches.

Lake Metapedia and river ; Little Cascapedia, and throughout New Brunswick. Though agreeing in the main, the Little Cascapedia *plumbeus* shows some evidence of being a form intermediate between the lake variety and the one next to be described. The head is not so broad, and is more pointed. Dorsal insertion more posterior (midway between snout and base of caudal), with the hinder rays shorter, hence its margin more oblique. Tail very emarginate. Eye large. Lateral band dusky. Size smaller. A handsome fish.

(b) *C. plumbeus*, Gnthr. *var.*

Size moderate, stoutish ; head short, muzzle blunt, no barbel, mouth and eye small ; vent more posterior than in any other form. Fins all small. Dorsal insertion far back, behind last ray of ventral, midway between snout and ends of middle rays of caudal ; its anterior rays *shortened* and free margin *convex*, its first rays equalling the last when fin is depressed. Anal same form. Caudal peduncle short and stout, hardly compressed, and fin less emarginate.

Coloration brilliant. Back olive brown with the usual dark scales, and passing into steel-blue. A blackish band from eye to caudal, with a narrow pale one above; sides silvery, with the region under the lateral band and extending from the operculum to the base of the caudal, almost scarlet in life.

Head, $4\frac{1}{3}$. Depth, $4\frac{1}{3}$. D. 8, A. 8. Scales, 12-70-8. Length, 4 inches. A beautiful little fish which deserves recognition as a well marked variety.

This is the form which the lower Gaspé rivers, Nouvelle and Grand Pabos, alone contain. It does not occur in New Brunswick.

Rhinichthys cataractæ (Val), Jordan. Long-nosed Dace.

Lake Metapedia, P.Q., and generally throughout New Brunswick.

R. atronasus (Mitch.), Ag. Black-nosed Dace.

Cascapedia and Bonaventure rivers. Not uncommon in New Brunswick ; Nova Scotia, J. M. Jones.

These two species are with us very closely related, and present at times such an instability of characters as to suggest intergrading. None have the 7-rayed dorsal said to be peculiar to *atronasus* further south ; that fin has always the 8 rays of *cataractæ*. The scale formulæ, too, show an approximation ; for *cataractæ* the average is about 12-62-7 or 8 ; for *atronasus*, 11-60-7. The latter is peculiar in having a narrow silvery band bordering the dark lateral band above—a feature nowhere else ascribed to it.

PERCIDÆ.

Perca americana, Schranck. Yellow Perch.

Though many suitable stations for this species were met with in the peninsula of Gaspé, it was not seen east of the Metapedia, nor was it known to settlers nor Indians to occur in the country. It is, however, quite abundant in Metapedia river and lake, and is generally distributed in New Brunswick and Nova Scotia. It is in all respects typical except in the number of anal fin-rays which are almost invariably II. 6 instead of II. 7.

CYPRINODONTIDÆ.

Fundulus diaphanus, LeSu. Spring Minnow.

This, the only fresh-water representative of the family in eastern Canada, so far as the writer knows, is very widely distributed ; and, as is usual with such a species, varies greatly. Its occurrence in New Brunswick was first reported by the writer in Bull. No. XIII. Nat. Hist. Soc. of N.B., pp. 5-7, and Roy McLean Vanwart and he collected it in Hillsboro river and at Rustico, P.E. Island, in June, 1896.

Common in the Bonaventure, Grand Pabos, York, and Dartmouth rivers, Gaspé. Abundant in the lower course of the St. John, N.B., and in lakes about the Bay of Fundy.

The Bonaventure fish, however, are peculiar in the reduced scale formula, narrow and shorter head and snout, scarcely enlarged teeth in outer row, lemon-yellow of inferior parts and fins, and shorter and stouter body.

As *diaphanus* is more or less an anadromous form but capable of living permanently in fresh water, its general distribution throughout the maritime provinces and Gaspé was to be expected.

COTTIDÆ.

Fresh-water sculpins are diminutive fish, affecting lakes, rivers, and especially rocky mountain streams, where they skulk about under cover of bottom objects, darting quickly across interspaces and disappearing suddenly, showing in their rapid movements fear of lurking enemies. Their food is found adhering to pebbles and rocks or creeping on the bottom, and consists largely of the aquatic larvæ of insects, crustacea, and worms. They also destroy immense quantities of trout spawn. Their habits and coloration make them hard to detect ; but if a few stones in the bed of a stream be cautiously turned over, the observer will be often surprised at the number of these little denizens found skulking beneath. Like other small fresh-water fishes of great power of adaptation to environment, these little cottoids seldom exhibit much stability in what are usually regarded as specific characters, so that the classification of the members of the genus *Uranidea*, to which nearly all our forms belong, consists largely in the recognition of certain extremes of variation. Hence the description and synonymy of this genus are very much confused. A large number of species and a larger number of varieties, have been described by various authors, especially by Girard in the "Monograph of the Fresh-water Cottoids," but there is little unanimity among them, and the whole genus needs a thorough revision.

Uranidea gracilis, Putnam. Miller's Thumb.

Metapedia River and Nouvelle River, P.Q. This species was first reported from the Maritime Provinces by the writer in 1896, who collected it from Green River, Victoria Co., N.B., and had it identified by Dr. B. E. Bean, of the Smithsonian Institution, Washington.

U. boleoides (Girard), Jordan. Miller's Thumb.

Metapedia River, with the last from which it is hardly separate. Miramichi, Restigouche and St. John rivers, N.B.

U. richardsoni, Ag. Miller's Thumb.

In all the Gaspé rivers, except those discharging into Gaspé Basin. Miramichi and Restigouche, New Brunswick. Most of our northern miller's thumbs belong to this species, which should more properly be

classed as a *Cottus*, for the ventral fin has one concealed spine and *four* soft rays, while Uranidea has but *three* of the latter. Its varieties are as numerous as its localities, but the following was the most conspicuous met with :—

U. richardsoni, Ag. var.—A peculiar type from Bonaventure River, distinguished by its tadpole shape, wide separation of the dorsals, and uniform black colour.

SALMONIDÆ.

Coregonus labradoricus, Rich.? White Fish.

A *Coregonus* occurs sparingly in the Grand Cascapedia, of which specimens could not be obtained ; but, judging from descriptions given by persons familiar with it, the writer thinks it is the above species. It seems confined to this river, for guides, settlers and Indians had never met with it elsewhere on the peninsula. Not uncommon in the St. John River, N.B., and in many of its tributary streams and lakes, especially above Grand Falls, where it is associated with *C. quadrilateralis*, Rich. ; found also in the Restigouche and Metapedia. Our form at least is very closely allied to *C. albus*, LeSu., of the Great Lakes and north-westward, of which it is probably a modified mountain or river form, as suggested by the character of the main points of difference—a slight increase in the scale formula and number of dorsal ray supports (being frequently 12 instead of 11), and the more elongate body.

Among the fresh-water fishes of New Brunswick none are more common nor characteristic of its streams, rivers, and lakes than *Semotilis bullaris*, Raf., Silver or River Chub ; *Lepomis gibbosus*, L., Sun-fish, Pond-fish ; *Amiurus catus*, Gill, Horned Pout, Cat-fish ; and *Lota maculosa*, Cuv. & Val., Burbot, Cusk ; all of which are absent from the Gaspé rivers and lakes, and only one, *L. maculosa*, is known to the writer to occur in the Restigouche. They are, however, in the main peculiar to lakes, ponds, lowland streams, and the lower courses of rivers, and hence, possessing little power of dispersal, their transmission from one river system to another, especially in a mountainous country, is nigh impossible.

REPTILIA OF GASPE.

Though no part of the primary object of the investigation, it was thought desirable to examine the reptilian life of the peninsula, as far as time permitted, and append a list thereof to this report. Compared with that of New Brunswick, there is a dearth of both species and individuals.

BUFONIDÆ.

Bufo (lentiginosus) Americanus, Le Conte. Toad.

Quite common throughout the peninsula, and in the Maritime Provinces. In New Brunswick, where the writer has studied it for many years, its characters are very unstable. Indeed, varieties seem to be marked in some localities.

RANIDÆ.

Rana virescens, K. Green Frog.

Rather uncommon, but observed in every river valley. The subspecies *R. v. brachycephala*, Cope, the prevailing inland form in New Brunswick, was not met with, nor was the latter collected in P.E. Island by Roy Vanwart and the writer in 1896.

Common in the coast region of New Brunswick, and in less abundance in P.E. Island. Reported from Nova Scotia by J. M. Jones, Vol. I., pt. 3, p. 123, N.S. Inst Nat. Sc.

R. palustris, Le Conte. Marsh Frog.

Occasional in Gaspé. Everywhere in New Brunswick, but not abundant. Rare in P.E. Island (Vanwart and Cox), and not reported from Nova Scotia.

R. septentrionalis, Baird. Mink Frog.

Abundant in all suitable places in Gaspé, where it takes the place largely of *R. fontinalis*, Le Coute. Lately reported from New Brunswick. *Vide* Proceedings Nat. Hist. Ass. of Miramichi, N.B., No. 1, p. 14. Not reported from Nova Scotia, nor does it occur on P.E. Island.

R. fontinalis, Le Conte. Spring Frog.

Rather uncommon in Gaspé, its place being taken by the last species. Abundant in New Brunswick, Nova Scotia (J. M. Jones), and in P.E. Island.

Very variable in New Brunswick, where three types occur, *R. fontinalis nigricans*, Ag., a small black variety ; *R. fontinalis clamitans*, a semi-terrestrial form, and the one mentioned in the list, which is the dominant type, especially in the northern part of the province.

R. sylvatica, Le Conte. Wood Frog.

Very rare in Gaspé. Generally distributed throughout the Maritime provinces.

HYLIDÆ.

Hyla picheringii, Storer. Tree Frog.

Common in Gaspé, where its note was heard in the valleys of all rivers. Common in all the Maritime provinces of Canada.

PLEURODELIDÆ.

Diemyctylus viridescens, Raf. Spotted Newt.

In small ponds in valley of the Grand Pabos, and in lakes in the basins of the York and Dartmouth rivers. Common in New Brunswick, and reported also from Nova Scotia by J. M. Jones. Collected in P.E. Island (Afton Lake) by Vanwart and Cox, where it attains the largest size, known to the writer, and is peculiarly coloured.

D. v., var. miniatus, Hallowell, was not met with, though always found in New Brunswick in the near vicinity of ponds containing the Newt, of which it is a seasonal and terrestrial form. It would be interesting to ascertain if this strange temporary stage of development obtains northward.

Desmognathus fuscus, Raf. Painted Salamander.

No mature example of this species was collected, but abundant larvæ seen in small ponds at New Carlisle were judged to be of this form. Though given in old lists as occurring in New Brunswick, the writer has not met it here, but instead what may be a colour variety of the same, *D. ochrophæa,* Cope, identified by the discoverer himself. *Vide* "Batrachia of New Brunswick," by P. Cox, Bull. XVI., Nat. Hist. Soc. of N.B., p. 65. Hence the larvæ referred to may be of this alleged species.

PLETHODONTIDÆ.

Plethodon cinereus, var. *erythronotus,* Green. Red-backed Salamander.

Not uncommon on the peninsula. Generally distributed in the Maritime provinces of Canada, including P.E. Island.

AMBLYSTOMIDÆ.

Amblystoma Jeffersonianum, var. *laterale*, Hall.

Seems to be very rare, for, though industriously sought after, was collected at but one station, Grand River. Heard of at a few points.

Common in New Brunswick, where, as in Gaspé, the type is larger, the body longer in proportion to the head, the legs, too, relatively shorter, anal groove wanting, and pelvic and caudal folds well represented.

Not observed on P.E. Island, nor reported from Nova Scotia.

A. punctatum, L. Great Spotted Salamander.

No specimen seen, but its unique and conspicuous colour pattern cannot be confounded with that of any of our salamanders, and hence it is easily known from descriptions. Heard of at a few points in the peninsula.

Common in the Maritime provinces.

SNAKES.

Coluber vernalis, De Kay. Green Snake.

Observed at several points on the peninsula. All through the Maritime provinces.

C. sirtalis, Hobb. Spotted Snake.

Occasionally met with in Gaspé. Common also in the Maritime provinces.

VI.—*The Scientific Work of Prof. Chas. Fred. Hartt.*

By G. U. HAY, PH.B., M.A.

(Read May 25th, 1899).

"A Canadian by birth and education, an American by residence and adoption, a Brazilian, I may almost say, by the chief labours and discoveries of his riper years, a scientist always and everywhere,—he was no common man, and in his . . . untimely death the science of two continents is called to mourn for one who cannot be replaced."[1]

Such were the words of a friend and co-worker, shortly after the news came from Brazil, twenty years ago, that Prof. Charles Frederick Hartt had fallen a martyr to science. It was indeed felt that science had lost one of its most enthusiastic and devoted workers, at an age, too—he was scarcely thirty-eight years old at the time of his death—when men are but entering on the riper achievements of life. Although the intervening years since Hartt's death have witnessed advances and scientific activity, unprecedented in the history of the United States and Canada, though there are scores of workers in every department of science where before there were but few, and though the narrow popular view of their work twenty years ago has given place to wider and more comprehensive ideas of the relation between science and common life, yet it may not be amiss to turn your attention for a few moments to a Canadian who represented this modern scientific spirit and who crowded into a few well-spent years results that few have been able to accomplish in a much longer period.

Hartt was not only an investigator himself. He had that rarer power of making others sharers in his own love of science and stimulating in them that eagerness for research which has characterized in a marked degree the band of students that gathered around him when he entered upon his duties as professor of Geology in Cornell University. "Nearly a quarter of a century has passed since, as a student of geology, I entered the laboratory of this gifted man. A teacher full of youthful enthusiasm, an original worker glowing with scientific zeal, a friend full of sympathy and love—this, my first impression, years have not dimmed. To study in his presence was indeed a pleasure, and, as the days and weeks sped by, my respect and admiration for him knew no bounds. To his students he was an ideal teacher whose word of commendation brought redoubled efforts to please."[2]

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[1] Professor Daniel S. Martin ; Proceedings of the Fifteenth Anniversary of the Convocation of the State of New York, Albany, 1879.

[2] Professor Frederick W. Simonds, Chair of Geology, State University, Austin, Texas. The "American Geologist," February, 1897.

It is this aspect of Hartt's life work, its absorbing and self-sacrificing pursuit of science, its power to impress itself upon others and influence their lives, that I would like to emphasize in this paper, rather than the mere record of his scientific work with which you are all familiar. But incidentally I shall refer to the chief features of this work; first, because too little of its scope and far-reaching results are known in Canada; and, secondly, from an educational point, we should refresh our memory occasionally with the record of those men who have sought the larger field and the larger rewards of the pursuit of science outside of Canada. They are Americans in the fullest sense of that term, but we should not lose sight of the fact that they are "Canadians by birth and education;" that while the product of their labours in science is the property of the world, it was in our own rugged climate, amid natural surroundings fitted to foster the true scientific spirit, in educational institutions laying well a broad foundation for future usefulness, in homes where Christian principles and honesty of purpose are held as a sacred trust, were nurtured those capacities that have found their fulfilment in after years of active energetic life.

Charles Frederick Hartt was born in 1840 at Fredericton, New Brunswick, that city which has since given birth to Roberts, Carman and others whose names are known to the world of literature. He received his academic education in Horton Academy, Wolfville, N.S., then under the principalship of his father, the late Jarvis W. Hartt, and later entered Acadia College, whence he was graduated in 1860, with the degree of B.A. Hartt showed various aptitudes besides his taste for science. He had musical ability of a high order, and excelled in drawing. He displayed extraordinary genius in the acquirement of languages. He availed himself of every opportunity from foreigners who came in his way to obtain some knowledge of their language. In this way he acquired the rudiments of Portuguese and Italian, and of various Indian dialects, which proved of the greatest advantage to him when he came to apply himself to his work in Brazil. He was accustomed to lecture to cultured audiences at Rio Janeiro under the patronage of the Emperor of Brazil. He was never at a loss to express himself in Portuguese, and spoke that language with the same facility as his mother tongue. With equal facility he accomplished the more difficult task of making himself acquainted with the various dialects of the Tupi Indians of Brazil, and in the midst of his severer scientific work he accomplished the mighty task of writing a grammar and dictionary of the Tupi dialects, together with kindred volumes on the antiquities and mythology of these Indians.

When a mere lad Hartt gave evidence of a taste for natural history, especially geology. During his school and college vacations, between the age of ten and twenty, he travelled over the greater part of Nova Scotia on foot, examining its rich geological features, pursuing independent investigations, and making large collections. These collections have been widely scattered, but they are still largely represented in the Museum of the Natural History Society of New Brunswick, at McGill University, Montreal, and at the Museum of Harvard University, Cambridge, Mass., and in the Museum of Cornell University, Ithaca, New York. The original investigations which he carried on, especially in the Lower Carboniferous and coal measures of Nova Scotia, attracted the attention of Dr. J. W. (now Sir William) Dawson, whose work on "Acadian Geology" has numerous references to the rich discoveries of the student-naturalist. By the advice of Dr. Dawson, Hartt became a student under Agassiz in his famous museum at Cambridge, Mass., but he continued to spend his vacations in Nova Scotia and New Brunswick. In the latter province he carried on his work partly alone and partly in connection with the geological survey, associated with Prof. Bailey and Dr. G. F. Matthew. Hartt, Matthew, and a few other kindred spirits formed the "Steinhammer Club," of St. John, from which originated the Natural History Society of New Brunswick. Hartt soon became deeply absorbed in the rich fossiliferous flora and fauna of the Cambrian and Devonian formations about St. John, especially in what is known as the "Fern Ledges," on the Lancaster beach, about two miles west of that city, researches that drew upon the young naturalist the attention of the scientific world. It was in these ledges that Hartt discovered the wings of insects, representing five species, the oldest then known to science. These were studied and named by Mr. S. H. Scudder, of Boston, and he has referred them all to the Neuroptera family. Hartt, in connection with Prof. Bailey and Dr. Matthew, obtained from the older rocks in the vicinity of St. John the first large collection of fossils from the primordial, or what is since better known as the Acadian group, which Dr. Matthew is now working with such signal success. Of these discoveries Dr. Dawson said[1] : "The collection and determination of the Cambrian fossils, of what is now known as the Acadian group, and the excavation of the numerous fossil plants of the Devonian of the same district, constitute in my judgment two of the most important advances ever made in the palæontology of Eastern America, and are even yet bearing fruit."

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[1] The Annual Address of President J. W. Dawson, before the Natural History Society of Montreal, May 18th, 1878.

The influence of that devoted teacher and naturalist, Agassiz, proved an inspiration to Hartt, while his association with kindred spirits such as Verrill, Morse, Putnam, Hyatt, Scudder, Niles, St. John, and others, stimulated his powers and directed his genius. These were to become some of the leaders who have wielded such a great influence in stimulating scientific education and research on this continent.

Hartt spent nearly four years as a special student under Prof. Agassiz in the Museum of Comparative Zoology at Cambridge, devoting his spare time chiefly to palæontology and the study and description of the rich geological and fossiliferous material he accumulated in Nova Scotia and New Brunswick. Hartt's genius for original investigation made him restive under the restraints imposed by the text-book and confinement within the walls of a school or college. When his father established a high school in St. John he became assistant ; but the uncongenial task of instructing a class in general subjects, while a newly discovered fossil was lying in his desk awaiting identification, proved intolerably irksome to him. Later, when he filled various positions as teacher of natural science in educational institutions in and about New York, and as professor of geology in Vassar College and afterwards in Cornell University, the laboratory and the field constituted his best teaching ground, although his fluency and personal magnetism as a speaker, and his wonderful powers of illustration, aided by chalk and blackboard, made him always a conspicuous figure in the classroom and on the lecture platform.

I was a student at Cornell while Hartt occupied the chair of geology, but as my studies led me in a different direction, I will let another[1] tell of his methods :

"I well remember my first visit to his laboratory. . . . At a small table in a large room, surrounded by boxes, barrels and trays, sat the indefatigable worker. The wealth of a Brazilian expedition demanded the attention of himself and his assistants. . . . The instruction offered was individual, adapted largely to the taste or inclination of the student. Almost all the work was palæontological, consisting of the collection, identification, description and drawing of fossils. . . . He subjected each student entering his laboratory to some preliminary test, and in that way surrounded himself with the best material; for the less fortunate ones, if not told so directly, soon found that the work of a geological laboratory was not their forte, and retired. He seemed to feel that a busy man of science could ill afford to waste his energies on material which, at the outset, promised to bear no fruit. . . .

Prof. Chas. Fred. Hartt—a Tribute. Dr. Frederick W. Simonds, *American Geologist*, Feb., 1897.

"But the greatest source of our inspiration lay in the fact that our teacher carried on his private work in our presence. His industry, patience and devotion served us as an example; his enthusiasm aroused us—we seemed to share with him his labour. Research, investigation, they had for us a different meaning now—had we not seen the truth seeker as he unravelled nature's secrets? Manuscripts, drawings, publications, conversations in the brief intervals of rest,—all kept the youthful mind in a glow of healthful excitement, and soon under his fostering care, some of the advanced and special students began the preparation of original papers. . . . That keenness of insight which guided him, that quality of insight so essential to an original investigator, he expected to be developed by the very nature of the task undertaken. Were it otherwise, the first requisite of a scientific life was wanting."

Such were the methods and such were the esteem and confidence inspired by Hartt's personality that to-day widely scattered over the continent there are men in educational and scientific pursuits who owe much to his guidance and sympathetic teaching. Among these may be mentioned, Mr. Orville A. Derby, the present director of the Geological Survey of Brazil; Dr. J. C. Branner, president of Leland Stanford University of California; Mr. Richard Rathbun, assistant secretary of the Smithsonian Institution, Washington; Dr. Theo. B. Comstock, lately president of the University of Arizona; Hon. W. F. E. Gurley, State geologist of Illinois; Dr. F. W. Simonds, of the University of Texas, and others. Many of these were associated with Hartt in his Brazilian work, of which I shall now speak more in detail.[1]

Hartt's interest in Brazil began with the Thayer expedition, which was sent to that country in 1865 under the leadership of Prof. Agassiz, to make scientific explorations. Hartt was appointed one of the geologists. So strongly was he impressed with the conditions which that country afforded as a field for investigation, that he made a second visit on his own account in 1867, and he finally decided to give up everything else and devote himself to scientific work there. The results of these two journeys to Brazil were incorporated in a large octavo volume of over 600 pages, entitled, "The Geology and Physical Geography of Brazil."[2]

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[1] For much of this as well as other material made use of in the present sketch, I am indebted to the publications and letters of Dr. Branner, Dr. Simonds, Dr. G. F Matthew, Sir Wm. Dawson, Profs. Niles and Putnam, of Cambridge, and Prof. D. S. Martin. I am especially under obligations to Mr. Rathbun, who recently told me many reminiscences of his association with Hartt in Brazil, and to Mr. Orville A. Derby, who by his letters has given me results of recent work in that country.

[2] Unfortunately this book is extremely rare and likely to remain so, as the plate which came into possession of Houghton, Mifflin & Co., of Boston, were destroyed two years ago.

This volume, Prof. Hartt has told us, is a report of his own investigations, and incorporates the best results of others who have written on the geology and physical geography of Brazil. The volume, which was published in 1870, is illustrated by sketches and a map drawn by the author himself. That Hartt was not satisfied with the data that he had accumulated for this great work is shown by the fact of his desire to return to Brazil and add more to his own and to the world's knowledge of that vast empire. By the generosity of friends, especially Mr. E. B. Morgan, of Aurora, N.Y., Hartt was enabled to conduct two additional expeditions to Brazil. They are known as the Morgan expeditions. The first of these was undertaken in 1870, and Hartt was accompanied by Mr. A. N. Prentiss, professor of botany in Cornell, and eleven students of that institution. No better testimony than this can be given of the enthusiasm which Hartt had aroused, nor of his own self-sacrifice in assuming the responsibility and training of so large a number of students in so distant a field. "If," he wrote, "to discover a new carboniferous fauna will repay a journey to Brazil, of how much greater importance is the discovery of a new naturalist? Had the expedition no other results than to add four new men to science, I should have considered time and money amply well spent."

It was on his return from the first Morgan expedition, his third journey to Brazil, that he published his dissent from Professor Agassiz on the marks of glacial action found in the valley of the Amazon. The researches of geologists since have fully confirmed Hartt's view.

In 1871 Hartt again returned to Brazil on what is known as the second Morgan expedition, accompanied by one assistant, Mr. O. A. Derby. On his return to Cornell in 1872, he devoted himself for two and a half years to his duties at the university, devoting all his spare time, with the aid of his two assistants, Messrs. Derby and Rathbun, to working up the results of the two Morgan expeditions, publishing some of these results in the journals of several scientific societies[1] and directing popular attention to Brazil in a series of lectures given at New York, Boston and Syracuse.

But the important work he had undertaken, and the, to him, meagre results that had been accomplished, led him to conceive of no less a project than a survey of the vast empire of Brazil. The details of this work are too well known to need recapitulation here. It is sufficient to say that a geological commission for the survey of the empire of Brazil, with Hartt as its chief, was established under the authority and

[1] Chiefly the Bulletin of the Buffalo Society of Natural Science, and the Cornell University Bulletin.

with the support of government. Hartt entered upon the work in June, 1875, with a corps of assistants that at no time exceeded six. His plan was to make a preliminary survey of the country before entering much into details, but he succeeded in thoroughly investigating some of the regions he explored.[1] As time went on and none of those immediate results were evident, such as the development of great mineral wealth which the leading men in the country expected would follow, disappointment manifested itself. The annoyances arising from the lack of necessary funds, the jealousies of local scientists, who could not enter into his spirit or his methods, met him at every step. But he would not swerve from his purpose. "As is the duty of every scientific man," he says, "I have carried on my investigations in a purely scientific way, hoping that later on they would not fail to be of practical importance. . . . All this preliminary work (alluding to his knowledge of the country, the preparation of his assistants for their work, the aid and advice of eminent scientific specialists everywhere), so exceedingly important to the geological commission, has cost nothing to government. . . . My great desire has been to lay a firm foundation for Brazilian geology in the development of palæontological localities and the accurate determination of characteristic formations by means of fossils, and to this end the commission has laboured with a degree of success surprising to myself, and we find ourselves to-day with an *embarras de richesses*. The commission as at present constituted comprises only six persons, on whom has fallen all this work of collecting, arranging and studying this material, which in richness is to be compared with that of the 'Thayer' or 'Hassler' or 'Challenger' expeditions; and it is not reasonable to expect that without free access to scientific libraries and collections for comparison, the work of the Brazilian Commission should go on more rapidly than that of the foreign commissions where the material is divided up among dozens of specialists and where the scientific man enjoys every advantage."

In the latter part of the year 1877 the work of the Commission was temporarily suspended from motives of economy, and before measures could be taken for its resumption in the following year, Hartt had died at Rio Janeiro from yellow fever, or, as the attendant physician pronounced, of congestion of the brain, induced by worry and exhaustion. The perplexities rather than the actual work of the commission had worn him out; and though his friends who had long noted with anxiety his condition pleaded with him to return home, he had refused, alleging that he was in honour bound to stand by the Commission.

[1] Richard Rathbun: Life and Scientific Work of Prof. Chas. Fred. Hartt, April, 1878.

Of his Brazilian undertaking, Prof. Martin[1] says: "In the prime of his early manhood, vigorous in health, active, persevering, enthusiastic, with a reputation in science already well recognized, and with a familiar acquaintance with the country that he was now called to serve, Hartt entered on his great career amid the pride and confidence of all who knew him aright. Nor did he fail to sustain his reputation. In the face of many difficulties and perplexities—the jealousies, the ignorance, and the wretched mock economy, that wear the brain and waste the time of almost every head of great scientific enterprises—he pursued his plans. With his faithful assistants, mainly young men who had been brought forward under his own instruction at Cornell, he explored, collected and wrote, until at last the hand of death stayed his ceaseless activity."

In 1876 Hartt accepted the directorship of the department of geology in the national museum at Rio Janeiro, but other and more pressing duties compelled him to relinquish it in a short time. The large museum which he founded in the same city will always bear testimony to the greatness of his work in that country. The immense geological and archæological collections which he brought home with him from all his expeditions except the first, and those sent by him and his assistants while chief of the Commission, were placed mainly in the museum of Cornell university; while in the Peabody museum of Cambridge the several large collections made by Hartt in the ancient shell heaps and burial mounds of the Indians of Brazil are to be found. "The most important articles in this interesting collection are the two large face urns, the large animal jar, and the several ancient vases and dishes of various . . . elaborately carved patterns."[2]

Hartt's work in Brazil is thus summarized by his friend and assistant, Mr. Rathbun[3]: "Hartt's greatest achievement in Brazil was probably his solution of the structure of the Amazonian valley. It was founded on the best of palæontological evidence which proves the existence of an immense palæozoic basin lying between the metamorphic plateau of Guiana on the north, and that of Central Brazil on the south, and through which flows the river Amazonas. Silurian, Devonian and Carboniferous rocks make up the series in regular succession, and in many localities are highly fossiliferous. He has explained the character of the isolated cretaceous deposits, mostly discovered by himself, exist-

[1] Proceedings of the Fifteenth Anniversary of the University of the State of New York. Prof. Daniel S. Martin, Albany, 1879.

[2] Report of the Peabody Museum, Cambridge, Mass., vol. 1, 1876.

[3] The Life and Work of Chas. Fred. Hartt by R. Rathbun. Paper before the Boston Natural History Society, 1879.

ing along the coast of Para to Bahia, and of the carboniferous and other regions south of Rio. He has shown us the manner in which the rocky structure of Brazil was built up, and has done much toward solving the relations of the crystalline rocks which compose by far the larger portion of its surface. He has explored the shell-heaps, burial-mounds, and other relic-localities of prehistoric tribes from far up the Amazonas to the southernmost coast province. We owe to him also the first real satisfactory explanation of the reefs of Brazil, which he distinctly shows to be of two kinds—sandstone and coral. He spent much time in studying the customs and languages of the modern Indian tribes of the Amazonas and Bahia, and collected very much material toward a grammar and dictionary of the Tupi Indian language in several of its dialects."

To this may be added the following from Dr. J. C. Branner, one of his assistants on the Commission : "It is not difficult to sum up Hartt's influence upon geological work in Brazil, for with very few exceptions all the work of this character which has been done in that country since 1874 is traceable, either directly or indirectly, to the impetus given it by Hartt. For the most part, the work has been done by some of Hartt's students and assistants ; and as he was not a narrow specialist, but a broad-minded naturalist, his students have also done other than purely geological work. . . . But Hartt's good influence has done even more for Brazil in keeping up the tone and character of scientific work than in the results thus far published. A country situated as Brazil is, far removed from the centres of scientific activity, is often the prey of the grossest forms of scientific charlatanism. Hartt and his assistants naturally came in contact with this class of men, but he so impressed the leading men of the empire with his ability and integrity that charlatanism was never able, in his presence, to make much headway."

"Brazil lost," says Mr. Derby, "a victim of her climate and in part, perhaps, of her backwardness in scientific matters, one of the most (if not the most) active, profound, versatile and disinterested investigators that ever set foot in the country. It may almost be said without exaggeration that in the geological and archæological literature of Brazil Hartt's contributions outweigh all the rest put together ; and it is not *mal apropos* to add that all these contributions were made without direct aid from the public purse, since few of the results of his official labours reached the point of being prepared for the press, and of these few a part is still inedited."[1]

Of the published works of Prof. Hartt, that on the "Geology and

[1] Orville A. Derby : As Investigaçoes Geologicas do Brazil. (Extract da "Revista Brazileira," T. II, 9° Fasc., 1 de maio, de 1895).

Physical Geography of Brazil" has been already alluded to. The others, embracing articles and reports published in various scientific journals, and the proceedings of scientific societies in Canada, the United States, and Brazil, are too numerous to be recapitulated here. It will be sufficient to indicate a few to show their general scope: Various articles on the geology and palæontology of Nova Scotia and New Brunswick; the same of Brazil; articles descriptive of the pottery and other antiquities, as well as of the ornaments and myths of the Indians of Brazil; "Evolution in Ornament," "Amazonian Tortoise Myths," "Notes on the Manufacture of Pottery among Savage Races," etc., to which may be added, various articles published since his death by his assistants, and by others directly and indirectly connected with the commission.

Of his unpublished works, some relate to the geological and archæological work in connection with the Brazilian Commission; but by far the most important is his grammar and dictionary of the Tupi Indian dialects, which by the consent of Mrs. Hartt was deposited in the national museum at Rio. In addition to this, there are two other publications ready for the press: *Brazilian Antiquities*, of about 500 pages, 4to, and *Mythology of Brazilian Indians*, of about 300 pages, 4to. The lack of a competent editor, so far, and the wants of means, have prevented their publication, but it is hoped that in the near future some generous patron of science or some antiquarian society, recognizing the value of the work from an ethnological point of view, may take the matter up and give to the world the result of Hartt's original and patient researches. Most of his MSS. are in the form of slip notes, but so methodical was he that he considered the actual writing as the least part of the preparation of his projected works. For him the work was essentially done when the investigation and reading that he considered necessary was ended and the results gathered in a pile of slip notes.

So engrossing had these ethnological studies become to Hartt, that it is not improbable, had he lived, he would have given his entire attention to South American antiquities.[1] He was a pioneer in this special field, and the results that he accomplished are of great value to future students.

I cannot close this sketch without a reference to the fact that one of Hartt's companions, Mr. Orville A. Derby, desirous of saving to science a part of the fruit of so much labour that cost so precious a life, decided to remain in Brazil and devote himself to this object. He was given control by the government over the material of the extinct Com-

[1] This statement is made on the authority of Dr. J. C. Branner and Mr. Richard Rathbun.

mission. With the assistance of his former colleagues and others, he has published in the *Archivos do Museu Nacional do Rio de Janeiro,* and in various scientific periodicals in the United States, results that are of great value to science and especially to the country for whose development Hartt and his devoted assistants did so much.[1]

[1] Mr. O. A. Derby, Hartt's first assistant in the Brazilian Survey, was, after some delay, appointed assistant director of the National Museum, where he has been able to carry on more or less geologic work ever since the suspension of the survey in 1877. During the past few years he has been director of a geological survey of the Province of San Paulo, where he is successfully carrying out in detail for that province the very work that Hartt hoped to accomplish for the Empire. . . His geologic work is the most thorough that has been done thus far in Brazil, almost all that has been done hitherto partaking more or less of the nature of reconnaissances. —DR. J. C. BRANNER : Prof. Hartt in Brazil, in the Cornell Magazine.

VII.—*On some points on the Physiology of the brain of the Bird.*

By WESLEY MILLS, M.A., M.D., Prof. of Physiology in McGill University

(Read May 26th, 1899).

I

The present is a short preliminary note on work not yet completed.

The author is re-investigating the whole question of cortical cerebral localization in the pigeon, on which subject a communication was previously made to the society.

He has also been engaged upon the examination of the results of removing greater and less portions of the cerebrum, and these were illustrated by two pigeons which were exhibited to the section. Of these one had suffered the loss of the greater part of the cerebrum about six months previously. This bird was capable of all the ordinary movements of the natural pigeon. It did not, however, eat voluntarily, but would swallow when food was put into its mouth, and would drink when its beak was dipped into water.

Its trophic condition was depressed, as shown by its general appearance, by a diseased condition of the mouth, with but a slight tendency to yield to treatment, and by loss of weight, in spite of the administration of specially nourishing food, etc.

There never has been any signs of paralysis or in-coordination of muscular movements.

In a second pigeon operated upon about three months ago, the condition is considerably different. From this bird only the posterior half of the cerebrum was removed. After a few days it began to eat and drink, and has fed as an ordinary bird ever since. It is, as may be seen in excellent condition, its appearance being in marked contrast to that of the other bird.

Its movements are to ordinary observation indistinguishable from those of a normal pigeon ; indeed, this applies to its entire life, somatic and psychic.

It is proposed to keep these birds alive for some time yet, and to continue to record the condition frequently in the future as in the past, and further efforts will be made to improve the nutritive condition of the one requiring it. Both birds will be kept under identical conditions for comparison, as in the past.

The operations on these birds were of course carried out under an anæsthetic, and antiseptically. The wounds healed rapidly, and they have never suffered any pain so far as can be observed.

II.

The Psychic condition of Birds deprived of portions of their cerebrum.

I propose to treat this subject in detail in a future paper, as such cases afford an opportunity to observe to what extent the removal of certain portions of the cerebrum modifies the psychic condition of the bird temporarily and permanently.

The fact that in the one of these birds food and water may be before it, however hungry it may be, without any response, while in the other no difference may be observed between it and a normal pigeon, is a difference of the most radical kind. Altogether this bird is much lower in the mental scale now than the other. These cases have afforded an opportunity to trace the origin and the development of certain manifestations of mental life, and it is believed that they will of themselves go far to establish some general truths in psychology. It would, however, be premature to enter upon a discussion of that subject in this note.

VIII.—*Catalogue of Canadian Proctotrypidæ.*

By W. HAGUE HARRINGTON.

(Read 25th May, 1899.)

The insect fauna of Canada is rich in species, and worthy of investigation both from its scientific and economic importance. In the past, that consideration has not been given to it that it abundantly deserves, but in recent years the ever-swelling tide of interest in insect life, rising in the United States, has in some measure overflowed the national boundaries and stimulated research in Canada. It must not, however, be inferred that Canadians have altogether overlooked this branch of natural history, for the Entomological Society of Ontario, the second oldest entomological society in America, has for thirty-five years earnestly endeavoured to quicken an interest in our insects, and to develop a knowledge of their forms and habits. The workers, however, have always been few in number in proportion to the enormous territory to be exploited, and extensive districts exist in which no collector has ever resided or even visited.

The attention and time of some of our most enthusiastic and skilful entomologists have also, necessarily, been in part devoted to the economic phases of insect manifestations, as the connection of the Entomological Society with the Agricultural Department of Ontario requires the preparation of annual reports adapted to the needs of the farmer and fruit-grower.

Naturally, under these restrictions, there has been a tendency to collect only in the orders of which the species might be most readily exchanged and determined, or which were markedly injurious to plant-life. Hence the lepidoptera, on account of their greater beauty, and the coleoptera, because they can be so easily collected and preserved, have largely monopolized attention, and their members are most fully known in cabinets and in literature. Yet even in these orders there are still many rare and new forms to reward the assiduous and skilful collector, even in the districts longest settled and most carefully investigated.

Of the other orders our knowledge is relatively meagre, and many fertile fields await those who may seek to garner their treasures. This is very markedly the case as regards the hymenoptera, an order extremely prolific in species and wonderfully interesting from the diversified structure and remarkable habits of the multitude of forms that compose it.

The great number of species of hymenoptera which inhabit our wide Dominion is indicated by the annexed catalogue of a comparatively small section of the order. Not fully indicated, however, as, although nomin-

ally covering the whole country, it is in reality a list, by no means exhaustive, of a single district, to which are added a few records from outside points. Of the two hundred species enumerated all but fifteen occur in the neighbourhood of Ottawa, while only about thirty-five are recorded from all the rest of Canada. It cannot be supposed, however, that the family is so centralized around the capital, and it is evident that our knowledge of the forms is yet fragmentary, and that this catalogue is only a preliminary one, a stepping-stone for future workers.

The late Abbé Provancher, an enthusiastic and indefatigable naturalist, devoted much of his labours to the insects of the Province of Quebec, publishing the results as supplements to the *Naturaliste Canadien*, commenced in 1869, and bringing them together in his *Petite Faune Entomologique du Canada*. The second volume of this work, completed in 1883, is in large part devoted to the Hymenoptera, and contains the descriptions of many new species. The Proctotrypidæ, pages 557-563, number only eight species, as follows:

Galesus quebecensis, sp. nov.
Basalys ruficornis, sp. nov.
Aneurhynchus spinosus, sp. nov. = *Oxylabis spinosus*, Prov.
Spilomicrus longicornis, sp. nov.
Proctotrupes rufigaster, sp. nov.
Proctotrupes abruptus, Say.
Proctotrupes flavipes, sp. nov.
Bethylus prolongatus, sp. nov. = *Perisemus prolongatus*, Prov.

On page 540, as representing a new genus in the Braconidæ, was described another species:

Copelus paradoxus, sp. nov. = *Helorus paradoxus*, Prov.

On page 808 a further addition is made of *Megaspilus lucens*, sp. nov. = *Proctotrypes flavipes*, Prov.

In 1889 the author endeavoured to bring his work up to date by publishing *Additions et Corrections au Volume II de la Faune Entomologique du Canada, traitant des Hyménoptères*, which includes several additions to the Proctotrypidæ, pages 173-184, based largely upon specimens contributed by Mr. J. A. Guignard and myself from Ottawa collections. These species are as follows:

Diapria apicalis, Say.
Aneurhynchus inermis, sp. nov. = *Aneurhynchus mellipes*, Ashm.?
Aneurhynchus aneurus, sp. nov. = *Platygaster Herrickii*, Pack.
Spilomicrus foveatus, sp. nov. = *Paramesius clavipes*, Ashm.?
Cinctus mellipes, Say.
Cinctus nasutus, sp. nov.
Gonatopus decipiens, sp. nov.
Bethylus formicoides, sp. nov. = *Perisemus formicoides*, Prov.
Telemonus stygicus, sp. nov. = *Habropelte armatus*, Say.

Platygaster canadensis, sp. nov.	= *Isocybus canadensis*, Prov.
Coptera polita, Say.	= *Galesus politus*, Say.
Platymischus torquatus, sp. nov.	= *Tropidopria torquata*, Prov.
Isotasius arietinus, sp. nov.	= *Megaspilus Harringtoni*, Ashm. ?
Acerota opaca, sp. nov.	= *Scelio opacus*, Prov.

On page 209 was described as the type of a new genus in the family Chalcididæ :

Trichasius clavatus, sp. nov.	= *Gryon clavatus*, Prov.

Two additional species are described in the *Supplement aux Additions*, same volume, pages 399-406 :

Telemonus rufoniger, sp. nov.
Trichacis auripes, sp. nov.

Among the additions to the Braconidæ was described, page 154, *Ropronia pediculata*, sp. nov., which the author, in the supplement, page 406, referred to the Proctotrypidæ, but which Mr. Ashmead considers, from the description and the figure of the wing, to be really a Braconid.

Several of the species enumerated have not been identified by the descriptions, and the types are not accessible to me, but accepting them all as distinct species, it is seen that only twenty-six species were then recognized in our fauna. This number has within the past decade been greatly increased through the labours of Mr. W. H. Ashmead, who has done so much to advance the knowledge of the Hymenoptera of America. In the *Canadian Entomologist*, volume xx., pages 48-55, he published "Descriptions of some new Genera and Species of Canadian Proctotrypidæ," based on material from Ottawa. His admirable monograph of the North American Proctotrypidæ (*Bulletin 45 U. S. Nat. Museum*), published in 1893, contains descriptions of many additional species. These forms were chiefly from Ottawa, and identifications of already described species raised the number of Canadian species to about ninety. More recently he has been kind enough to publish for me further "Descriptions of some new Genera and Species of Canadian Proctotrypidæ" (*Canadian Entomologist*, volume xxix., pages 53-56, March, 1897), and to identify other material for me. The aid and encouragement received during my long correspondence with this learned entomologist are now most gratefully and warmly acknowledged.

Notwithstanding the numerous species which have been described from our fauna, the limited extent of our knowledge is evidenced by the fact that forms apparently new to science are still abundant, and additions can be made to the list of species by almost any day's collections. Hence I ventured to describe, in the *Canadian Entomologist*, volume xxxi., pages 77-80, April, 1899, "Six new Ottawa Proctotrypidæ," and have with regret felt it necessary now to describe several additional species, in order to incorporate them in this catalogue.

It is hoped that the publication of even this imperfect list may be an incentive to some Canadian entomologists to devote a portion of their time to the collection and preservation of material in orders other than the two hitherto fashionable. The Hymenoptera are neither difficult to collect nor to preserve, and this holds good even of the much neglected Proctotrypidæ. It is true that they are small and inconspicuous, often indeed microscopic, but once some slight knowledge of their appearance and habits is gained, they can be readily recognized and collected, and new or rare forms will certainly reward and stimulate the collector. It may not be amiss, therefore, in this hope of arousing an interest in their collection, and so obtaining a more adequate idea of their number and distribution, to make a few observations upon their habits, imperfectly as these are known in regard to the majority of the species.

Having arranged my collection in accordance with the scheme adopted by Mr. Ashmead in his monograph, the title Proctotrypidæ is retained for all our species. Recently, however, this eminent author, in a suggested revision of the classification of the Hymenoptera (*Journal New York Entomological Society*, volume vii., pages 45-60, March, 1899), separates the forms having one-jointed trochanters and lobed posterior wings to form the family Bethylidæ of the superfamily Vespoidea—a position in accordance with the views of those earlier authors who considered them to be aculeates. This family would include the subfamilies Bethylinæ and Dryininæ of my list, as well as the Emboleminæ, of which no Canadian species is recorded, and of which indeed only one American species has been described. The remaining forms, having two jointed trochanters and unlobed posterior wings, are placed in the superfamily Proctotrypoidea, which also includes Pelicinus, an insect remarkable for its long, slender abdomen, and which is not rare in Canada.

As previously stated, our Proctotrypids are all small, seldom reaching the length of one-fourth of an inch, and sometimes, as in the case of Bæus, being scarcely visible or recognizable as insects, except to the trained and watchful eye. They have, however, considerable and interesting diversities of structure, and even very remarkable characters, which require the use of the microscope for their proper inspection. They are all sombre in colour, usually black or brownish, but often with the legs, and sometimes more or less of the body, yellow, or, as with some of the genus Proctotrypes, they may be more or less red. They have none of the bright metallic and iridescent hues of the Chalcididæ, which they resemble only in size. Even in the field the trained eye at once distinguishes them by their more ant-like or wasp-like forms, and by the manner in which the wings are held when dead they can be distinguished from the minute Braconids, which often occur with them. These have the wings erect, with the upper surfaces more or less closely applied, whereas in the Proctotrypids they are laid flat and cover the abdomen.

Proctotrypids are also much less active in their movements, and, when taken with a sweeping-net, usually walk lazily about and are slow to take flight; often, also, they remain motionless, "shamming dead," with the antennæ folded beneath the body. Chalcids, on the contrary, are quick in taking wing, as a rule, and thus a smaller proportion of the specimens taken in a net will be secured.

Sweeping among the luxuriant herbage of damp localities is the most expeditious method of making a collection, but some species occur only in drier situations. A more valuable mode of obtaining specimens is to breed them, thus obtaining, what is infinitely more valuable than the specimens themselves, records and observations of their life-histories. In the great complex of insect life these minute creatures hold a very important place, as they are all true parasites, attaining their development at the expense of other insects or of arachnids, and thus forming a great check upon the undue multiplication of many forms. All the members of one of the largest subfamilies are exclusively egg-parasites, infesting especially the eggs of lepidoptera, hemiptera, orthoptera and spiders. Usually one specimen only develops in an egg, but some species are so small that several may find sufficient nourishment therein. The remaining forms live in the bodies of insects in their larval and pupal stages. The entomologist who rears insects in any order has thus opportunities of breeding these parasites and of recording his observations as to their hosts.

The following are the habits attributed to the several subfamilies. The Bethylinæ are believed to be largely parasitic on coleopterous larvæ, as they have been reared from galls and fungi inhabited by such larvæ; other genera inhabit ant-nests, and some prey upon microlepidopterous larvæ. The Dryininæ confine their attacks to certain groups of homopterous insects, and the peculiar pincer-like claws of the females of most genera are supposed to enable them to grasp the larval forms of such homoptera. The Ceraphroninæ are chiefly parasitic on aphids and cecidomyids. The Scelioninæ are true egg-parasites, and may be readily reared from the eggs of lepidoptera, hemiptera, orthoptera and spiders. The Platygasterinæ infest the larvæ of the families Cecidomyidæ and Tipulidæ of the Diptera. The Helorinæ, limited to the single genus Helorus, are parasitic in the cocoons of Chrysopa, a neuropterous genus. The Proctotrypinæ are considered to prey upon the larvæ of flies and beetles living in fungi, and the Belytinæ are supposed to have similar habits. The Diapriinæ are thought to be confined to dipterous larvæ, but the habits of only a small proportion are fully known.

Our knowledge regarding the habits of the Canadian species is, as may be easily understood, of the most meagre character, and it is most desirable that information should be acquired as to the life-histories of as many forms as possible. By collecting eggs and larvæ which appear to

be parasitized, as well as galls and fungi, it may be possible to any person to add largely to our scanty knowledge.

As regards the best time to capture the mature insects in the field, although a few forms occur in spring, it is not until midsummer that they become numerous. My records show that the most specimens are obtained in August and the first week of September, but probably both before and after this period they may be much more abundant than my dates indicate. During July my official duties prevent me annually from collecting, and frequently I have been absent during a portion of September, thus making the record for that month incomplete. Even in the early part of October, if fine weather prevails, a considerable number of forms are still abroad, and later still specimens can be obtained by collecting moss and *débris* and sifting them out. I have obtained representatives of at least thirty species from moss collected in swamps, usually late in November and even after the ground was covered with snow. These are chiefly apterous forms, especially of the ceraphronids and scelionids, and always females, many of which doubtless thus pass the winter, for, though I have never obtained moss in the early spring, the insects remained alive so long as the moss was kept in a suitable condition, not being allowed to become dry or to be exposed to too low a temperature. It is probable that the summer forms of many of these apterous individuals will be winged in both sexes.

When our species shall have been more fully studied, it is inevitable that numerous synonyms will be found, arising from such differences in the development of the wings and other structural variations, as well as from the difficulty of correlating the sexes of many species until they shall have been reared together. Certain species have been created on differences, apparently distinctive, between a few individuals, but which in a larger series of specimens will be found to be merely individual variations, merging imperceptibly to a common central type. On the other hand, some individuals now grouped together, especially when of opposite sexes, will prove to be distinct species, so that the total number at present recognized will not probably be much changed, and it will always be increasing by the addition of new species from our vast and as yet almost unexploited territories.

PROCTOTRYPIDÆ.

Subfamily I.—BETHYLINÆ.

ISOBRACHIUM MYRMECOPHILUM.

Isobrachium myrmecophilum, Ashmead, Monog. N. A. Proctotrypidæ, p. 37.

One ♂ taken with the sweeping-net in a small swamp on the old racecourse, Ottawa, 24th August.

ISOBRACHIUM MANDIBULARE.

Isobrachium mandibulare, Ashmead, Monog. N. A. Proc., p. 38.

One ♀, labelled Toronto, 24th April, from Mr. W. Metcalfe.

MESITIUS VANCOUVERENSIS.

Mesitius vancouverensis, Ashmead, Monog. N. A. Proc., p. 64.

The type ♀ in Coll. Ashmead was received by me from Rev. G. W. Taylor, Victoria, V. I.

MESITIUS BIFOVEOLATUS.

Mesitius bifoveolatus, Ashmead, Monog. N. A. Proc., p. 66.

Two ♀♀. Ottawa, 11th May; Hull, Que., 27th August, 1898.

ANOXUS CHITTENDENII.

Anoxus Chittendenii, Ashmead, Monog. N. A. Proc., p. 68.

One ♂ taken at Hull on 28th July, 1894.

PERISEMUS FORMICOIDES.

Bethylus formicoides, Provancher, Add. Faune Hyménopterologique, p. 179, ♀.
Epyris formicoides, Provancher, *ibid.*, p. 402.
Perisemus formicoides (Prov.), Ashmead, Monog. N. A. Proc., p. 70.

The type ♀ was taken at Ottawa. In my collection is a specimen determined by Provancher, and also taken at Ottawa. It seems to differ from *P. prolongatus*, Prov., chiefly in having the antennæ somewhat more slender, and the mandibles yellow. It may be only a form of that species.

PERISEMUS PROLONGATUS.

Bethylus prolongatus, Provancher, Nat. Can., vol. xii, p. 265, ♀; Faune Ent. Can., p. 563.
Bethylus prolongatus (Prov.), Ashmead, Ent. Am., iii, p. 97.
Epyris prolongatus, Provancher, Add. Faune Hym., p. 402.
Perisemus prolongus (Prov.), Ashmead, Monog. N. A. Proc., p. 72.

Ashmead states that his description is made from the type specimen given to him by the author, but this is evidently an error, as Provancher described the species previous to my correspondence with him, and the type has never been seen by me. The specimen sent to Ashmead may have been one determined by Provancher, or possibly it was the type of *P. formicoides*. Provancher, in his description of the species, says: "Wings slightly smoky, the stigma with a pale point at base, the radial cell large, open at the tip, the lobes of the lower wings profoundly divided." He adds, in a note to the description: "Very recognizable by the lobes of the inferior wings." The specimen described by Ashmead has "wings aborted, not extending to tip of metathorax." In all my

specimens (one of which was determined by Provancher) the wings are thus abbreviated, only in one specimen reaching to tip of metathorax. The legs vary considerably in colour. Seven ♀♀ and one ♂ taken at Hull and Ottawa; dates ranging from 2nd June to 23rd August. Type of species was from some point in the Province of Quebec.

GONIOZUS CELLULARIS.

Bethylus cellularis, Say, Bost. Jour. Nat. Hist., i, p. 279; Lec. Ed. Say, ii, p. 726.
Bethylus cellularis (Say), Ashmead, Ent. Am., iii, p. 97.
Goniozus cellularis (Say), Ashmead, Monog. N. A. Proc., p. 74.

One ♀ labelled Ridgeway, Ont., 30th May, 1891, received from Mr. E. P. Van Duzee.

GONIOZUS FOVEOLATUS.

Goniozus foveolatus, Ashmead, Ent. Am., iii., p. 76, ♀; Monog. N. A. Proc., p. 74, ♂.

One ♀, Hull, 19th August, 1894; one ♂, Hull, 29th July, 1894; one ♂, Ottawa, 19th June, 1895; one ♂, Sudbury, Ont., 16th June, 1892.

Subfamily III.—DRYININÆ.

GONATOPUS CONTORTULUS.

Gonatopus contortulus, Patton, Can. Ent., xi, p. 65, ♀; Ashmead, Ent. Am., iii, p. 74; Monog. N. A. Proc., 83.

One ♀ apparently of this species, taken with sweeping-net in swampy undergrowth near Hull, Que., 29th July, 1894.

GONATOPUS DICIPIENS.

Gonatopus dicipiens, Provancher, Add. Faune Hym., p. 179.
Gonatopus dicipiens (Prov.), Ashmead, Monog. N. A. Proc., p. 85,

Type ♀ in Coll. Provancher, taken at Cap Rouge. In the description it is said to have "one large ocellus upon the vertex;" it is also said to be "rare," which might indicate that the Abbé had more than one specimen.

GONOTOPUS FLAVIFRONS.

Gonotopus flavifrons, Ashmead, Monog. N. A. Proc., p. 84, pl. v., fig. 4, ♀.

One ♀ from swampy meadow, Hull, 15th July, 1894. The specimen is apparently immature, and is neither so large nor so brightly coloured as the type ♀ which was collected by Mr. Van Duzee at Albany, N. Y.

CHELOGYNUS CANADENSIS.

Chelogynus canadensis, Ashmead, Monog. N. A. Proc., p. 93, pl. vi, fig. 1, ♀.

Type ♀ in Coll. Ashmead, from Ottawa. One ♀ taken at Hull, 4th June.

ANTEON POLITUS.

Anteon politus, Ashmead, Monog. N. A. Proc., p. 96, pl. vi, fig. 2, ♀.

Type ♀ in Coll. Ashmead, from Toronto. Three ♀♀ from Hull July and August. This species was incorrectly given as *Phorbas laticeps*, Ashmead, in Can. Ent., xxvii, p. 156.

ANTEON PUNCTICEPS.

Anteon puncticeps, Ashmead, Monog. N. A. Proc., p. 97, ♂.

One of the types in Coll. Ashmead was taken by Mr. H. F. Wickham in Vancouver Island.

APHELOPUS MELALEUCUS.

Gonatopus melaleucus, Dalman, Sv. Ak. Handl., 1818, p. 82, ♀.
Aphelopus melaleucus (Dalm.), Ashmead, Monog. N. A. Proc., p. 101.

One ♂ in Coll. Ashmead, from Ottawa. One ♂, Grimsby, 13th May, 1894; one ♂, Port Hope, 21st May, 1895; these two specimens collected by Mr. W. Metcalfe. The species in Europe is a parasite of *Typhlocyba*.

APHELOPUS AFFINIS.

Aphelopus affinis, Ashmead, Monog. N. A. Proc., p. 102.

Type ♀ in Coll. Ashmead, from Canada, exact locality not mentioned.

Subfamily IV.—CERAPHRONINÆ.

Tribe I.—MEGASPILINI.

HABROPELTE FUSCIPENNIS.

Megaspilodes fuscipennis, Ashmead, Bull. 3, Kans. Exp. Sta. App., p. 11, 1888.
Habropelte fuscipennis, Ashmead, Monog. N. A. Proc., p. 105.

Two ♀♀ and one ♂ from Ottawa. This is the largest of our species belonging to the subfamily, and also one of the largest of all our proctotrypids.

HABROPELTE ARMATUS.

Ceraphron armatus, Say, Bost. Jour. Nat. Hist., i, p. 276; Lec. Ed. Say, ii, p. 724.
Lygocerus armatus (Say), Ashmead, Ent. Am., iii, p. 98.
Megaspilodes armatus (Say), Ashmead, Bull. 3, Kans. Exp. Sta. App., p. 11, 1888.
Telenomus stygicus, Provancher, Add. et Corr., p. 180.

The type ♀ of Provancher's species was collected at Ottawa.

LYGOCERUS PALLIPES.

Lygocerus pallipes, Harrington, Can. Ent., xxxi, p. 77.
Two ♀♀ and one ♂ from Hull, Que., August, 1897.

LYGOCERUS PICIPES.

Lygocerus picipes, Ashmead, Monog. N. A. Proc., p. 109.

Type ♀ in Coll. Ashmead, from Ottawa. One ♀ taken at Kettle Island, below Ottawa, in July, and two ♂♂ from Hull in August.

LYGOCERUS STIGMATUS.

Ceraphron stigmatus, Say, Bost. Jour. Nat. Hist., i, p. 277; Lec. Ed. Say, ii, p. 724.
Lygocerus stigmatus (Say), Ashmead, Ent. Am., iii, p. 98; Monog. N. A. Proc., p. 110.

Two ♀♀ and three ♂♂ of this useful parasite were received from Dr. Fletcher, who bred a number of specimens from an aphis infesting the raspberry, *Rubus strigosa.*

MEGASPILUS STRIATIPES.

Megaspilus striatipes, Ashmead, Monog. N. A. Proc., p. 115, pl. vi, fig. 7, ♀.

Type ♀ in Coll. Ashmead, from Ottawa.

MEGASPILUS HARRINGTONI.

Megaspilus Harringtoni, Ashmead. Can. Ent., xx, p. 48; Monog. N. A. Proc., p. 116.

Types ♀ ♂ in Coll. Ashmead, from Ottawa. Six ♀♀ in my collection, from same district. One of these was bred from the puparium of a willow Diplosis in April; the remainder were taken in July and August. This species is larger than the following, and appears quite distinct.

MEGASPILUS OTTAWAENSIS.

Eumegaspilus ottawaensis, Ashmead, Can. Ent., xx, p. 49.
Megaspilus ottawaensis, Ashmead, Monog. N. A., Proc., p. 117.

Type ♀ in Coll. Ashmead, from Ottawa. This is one of our commonest proctotrypids. The typical form has abbreviated wings, but individuals of both sexes occur with fully developed wings. The males are rare, especially those of the short-winged form. The insects can be easily obtained by sweeping the herbage of swampy localities during August and September. They can also be obtained by sifting moss collected at the beginning of winter, but the specimens so found are all of the short-winged race.

MEGASPILUS CANADENSIS.

Eumegaspilus canadensis, Ashmead, Can. Ent., xx, p. 49.
Megaspilus canadensis, Ashmead, Monog. N. A. Proc., p. 117.

Type ♀ in Coll. Ashmead, from Ottawa. Four ♀♀ taken in August with the preceding species, of which it is probably a variety.

One ♀, collected by the Rev. J. H. Keen at Massett, Queen Charlotte Islands, B. C., received through Dr. Fletcher, seems identical with this species.

Tribe II.—CERAPHRONINI.

CERAPHRON MINUTUS.

Megaspilidea minuta, Ashmead, Can. Ent., xx, p. 49.
Ceraphron minutus, Ashmead, Monog. N. A. Proc., p. 125.

Type ♀ in Coll. Ashmead, from Ottawa. Five ♀♀ from same locality, of which three were sifted from swamp mosses.

CERAPHRON CRASSICORNIS.

Ceraphron crassicornis, Harrington, Can. Ent., xxxi, p. 77.

Type ♀ in Coll. Harrington, from Ottawa.

CERAPHRON AURIPES.

Ceraphron auripes, Ashmead, Monog. N. A. Proc., p. 125.

Type ♀ in Coll. Ashmead, from Ottawa. The wings of this specimen are described as extending only to base of abdomen, but a second ♀ in my collection (determined by Ashmead) has fully developed wings.

CERAPHRON MELANOCEPHALUS.

Copidosoma melanocephalum, Ashmead, Trans. Am. Ent. Soc., xiii, p. 131.
Ceraphron melanocephalus, Ashmead, Monog. N. A. Proc., p. 126.

One ♀ apparently of this species, from Hull, 19th August.

CERAPHRON PALLIDIVENTRIS.

Ceraphron pallidiventris, Ashmead, Monog. N. A. Proc., p. 126.

Two ♀♀ captured in August near Ottawa.

CERAPHRON BASALIS.

Ceraphron basalis, Ashmead, Monog. N. A. Proc., p. 127.

Four ♀♀ and three ♂♂, taken near Hull in August.

CERAPHRON PUNCTATUS.

Ceraphron punctatus, Ashmead, Monog. N. A. Proc., p. 127, pl. vii, fig. 2, ♀.

Two ♀♀ and two ♂♂, taken on 27th August, 1898, near Hull.

CERAPHRON AMPLUS.

Ceraphron amplus, Ashmead, Monog. N. A. Proc., p. 129.

Fourteen ♀♀, from Ottawa, in August.

CERAPHRON MELANOCERUS.

Ceraphron melanocerus, Ashmead, Monog. N. A. Proc., p. 129.

Two type ♀♀ in Coll. Ashmead, from Ottawa. Eleven ♀♀ and eight ♂♂ obtained by sweeping herbage and sifting moss. The species was especially abundant in August, 1897.

CERAPHRON PEDALIS.

Ceraphron pedalis, Ashmead, Monog. N. A. Proc., p. 130.

The ♀ of this species appears to be common about Ottawa in August, but the ♂ is rare. One ♀ taken also on 13th May and one sifted from moss in November.

CERAPHRON FLAVISCAPUS.

Ceraphron flaviscapus, Ashmead, Monog. N. A. Proc., p. 130.

Three ♀♀, one of which was from moss collected in November at Dow's Swamp, Ottawa; the others taken near Hull in August.

APHANOGMUS BICOLOR.

Aphanogmus bicolor, Ashmead, Monog. N. A. Proc., p. 134.

Type ♀ in Coll. Ashmead, from Ottawa. The type, as well as two ♀♀ in my collection, were obtained by sifting moss, and are apterous. A ♀ taken near Hull, 2nd August, 1897, has, however, fully developed wings, and is slightly smaller.

APHANOGMUS MARYLANDICUS.

Aphanogmus marylandicus, Ashmead, Monog. N. A. Proc., p. 135.

Seven ♀♀ and two ♂♂ taken at Ottawa and Hull in August appear to belong to this species, although the legs, including coxæ, are entirely pale, the body is microscopically punctate, and the mesopleura faintly aciculate.

A ♀ which I found upon a fungus at Parrsboro', N. S., in September, 1897, may belong to this species, but the scape is pale and the abdomen piceous.

APHANOGMUS SALICICOLA.

Aphanogmus salicicola, Harrington, Can. Ent., xxxi, p. 78.

One ♀ and two ♂♂ bred from cecidomyid galls on willow; Ottawa.

APHANOGAMUS PALLIDIPES.

Aphanogmus pallidipes, Ashmead, Monog. N. A. Proc., p. 135.

One ♀ apparently referable to this species, from moss; Ottawa.

APHANOGMUS VIRGINIENSIS.

Aphanogmus virginiensis, Ashmead, Monog. N. A. Proc., p. 135.

One ♀ and one ♂, 27th August, 1898, Hull. The band on wing is scarcely perceptible in the female.

Subfamily V.—SCELIONINÆ.

Tribe I.—TELENOMINI.

TRIMORUS AMERICANUS.

Trimorus americanus, Ashmead, Monog. N. A. Proc., p. 139.
One ♀ taken 15th August, 1897, Hull, Que.

PHANURUS OVIVORUS.

Phanurus ovivorus, Ashmead, Monog. N. A. Proc., p. 140.

One ♀ taken 16th October, 1897, in my library, upon a window-pane, Ottawa.

This specimen agrees fully with description, and has also been carefully compared with a specimen received from Ashmead. The mandibles, however, which are open and thus easily examined, are trifid instead of bifid, as given in generic description.

TELENOMUS GRACILICORNIS.

Telenomus gracilicornis, Ashmead, Monog. N. A. Proc., p. 149.

Type ♀ in Coll. Ashmead, from Ottawa. Four ♀♀ and one ♂, also from same district. The ♂ was taken on 2nd August, near Hull; one ♀ at Chelsea on 3rd October; two from moss collected on Experimental Farm in November, and one from moss from Dow's Swamp, same month.

TELENOMUS GRAPTÆ.

Telenomus graptæ, Howard, Scud. But. New Eng., p. 1896, pl. 89, fig. 9.
Telenomus graptæ (How.), Ashmead, Monog. N. A. Proc., p. 151.

Twenty-five ♀♀ and six ♂♂, bred from two eggs of *T. polyphemus* found upon a hickory-leaf, Hull (Can. Ent., xxviii, p. 79), seem to belong to this species. Mr. Howard states (*loc. cit.*) that he received from Prof. Scudder a female which he could not separate from this species, and which was bred from the egg of *Limnochares taumas*, collected at Nipigon in 1888.

TELENOMUS ORGYIÆ.

Telenomus orgyiæ, Fitch, Eighth N. Y. Rept., p. 197.
Teleas orgyiæ (Fitch), Ashmead, Ent. Am., iii, p. 100.
Telenomus orgyiæ (Fitch), Ashmead, Monog. N. A. Proc., p. 152.

Twenty-three ♀♀ and three ♂♂, reared from eggs of *Orgyia*; Ottawa.

TELENOMUS PODISI.

Telenomus podisi, Ashmead, Monog. N. A. Proc., p. 158.

Five ♀♀ and three ♂♂ collected in August, Hull and Ottawa. Two ♀♀ and three ♂♂ reared by Dr. Fletcher from eggs of *Podisus* sp., obtained at Dog Lake, Okanagan Valley, B. C., in July, 1895.

TELENOMUS PAMPHILÆ.

The following hitherto unpublished description of this species was drawn up by Mr. Ashmead and sent by him to Dr. Fletcher in September, 1894, under the title, "An egg-parasite of *Pamphila metacomet*."

Telenomus pamphilæ, sp. nov.

♀.—Length 1 mm. Black, polished, except the mesonotum, which is subopaque, sparsely microscopically punctate, and clothed with a pubescence. Head a little more than thrice as wide as long antero-posteriorly, smooth and shining, except a faint microscopic punctuation on vertex posteriorly, only visible under a strong lens; eyes oval, very faintly and sparsely pubescent; mandibles rufo-testaceous; palpi whitish; antennæ eleven-jointed, black or brown-black, the flagellum, including the pedicel, not quite twice as long as the scape, the first funicular joint about one-third longer than the pedicel, the second about half the length of the first, the third a little smaller than the second, the fourth moniliform; the first joint of the club is the same length as the fourth funicular joint, but nearly twice its width, the club joints 2, 3 and 4 are larger, quadrate, and about of an equal size, the last, or joint 5, being conical. Legs brown-black, the trochanters, all knees and tarsi, except their last joint, and the anterior tibiæ and extreme apex of middle and hind tibiæ, honey-yellow. Wings hyaline, the venation fuscous or brownish, the marginal vein being scarcely half the length of the stigmal, while the postmarginal is fully one and a half times as long as the stigmal. Abdomen broadly oval, smooth and highly polished, except the short petiole and the second segment at extreme base (in the suture), which are striated; the second segment is very little longer than wide, and occupies most of the surface, the terminal segments being extremely short and retracted within the second.

Habitat.—Ottawa, Canada.

Described from two ♀ specimens bred in September, 1894, by Mr. James Fletcher, from the eggs of *Pamphila metacomet*.

The species approaches nearest to *T. utahensis* Ashm., taken by Mr. Schwarz in Utah, but differs in the relative length of the antennal joints and in having a longer second abdominal segment. (W. H. Ashmead, September 30th, 1894.)

TELENOMUS CŒLODASIDIS. (?)

Telenomus cœlodasidis, Ashmead, Monog. N. A. Proc., p. 159.

Three ♀♀ and two ♂♂ reared from a cluster of hemipterous eggs upon a hickory-leaf; Hull.

TELENOMUS HULLENSIS, *sp. nov.*

♀.—Length 1 mm. Black, subopaque. Head transverse, closely punctate or shagreened, with a carina between antennæ and a fovea beneath middle ocellus;

eyes large, oval, almost naked; antennæ eleven-jointed, black, pedicel shorter and stouter than first flagellar joint, second and third together as long as first, fourth transverse, nearly as wide as club, club-joints wider than long, the last conical; mouth parts entirely black. Thorax convex, closely punctate with linear rugosities posteriorly, scutellum convex, finely punctate. Marginal vein one-third shorter than stigmal, nervures brownish. Legs black, the knees and tarsi and anterior tibiæ in part rufous. Abdomen highly polished, first segment striate, and second segment with punctures or short striæ at base.

Described from one specimen collected near Hull on 27th August, 1898. This insect is easily distinguished from our other species by the sculpture of mesothorax.

? TELENOMUS RUFONIGER.

Telenomus rufoniger, Provancher, Add. et Corr., p. 403, ♂.
Telenomus rufoniger (Prov.), Ashmead, Monog. N. A. Proc., p. 161.

The insect was taken at Cap Rouge, Que., but, as Mr. Ashmead says, it does not belong to *Telenomus*, and is probably a *Ceraphronid*.

TRISSOLCUS EUCHISTI.

Telenomus euchistus, Ashmead, Bull. No. 3, Kans. Ex. Stn., App., p. 11, 1888.
Trissolcus euchisti, Ashmead, Monog. N. A. Proc., p. 162.

One ♂ from Ottawa. Thirteen ♀ ♀ and one ♂ reared by Dr. Fletcher from eggs of *Euchistus* sp., obtained at Dog Lake, Okanagan Valley, B. C., July, 1895. One ♀ taken on Gabriola Island, V. I., on 11th May, 1897, by Rev. G. W. Taylor.

The specimens from Dog Lake, though apparently belonging to this species, are slightly larger than types received from Mr. Ashmead, and the legs, except coxæ and middle and posterior femora in part, are honey-yellow or rufous.

Tribe II.—BÆINI.

ACOLOIDES SAITIDIS.

Acoloides saitidis, Howard, Insect Life, ii., p. 270, fig. 58; *loc. cit.*, p. 359.
Acoloides saitidis (How.), Ashmead, Monog. N. A. Proc., p. 171.

Numerous ♀ and ♂ specimens reared in 1896 from eggs of spiders, Ottawa: Can. Ent., xxviii, p. 79. Two ♀ ♀ collected by Rev. J. H. Keen, at Massett, Q. C. I., and received through Dr. Fletcher, differ from description in having the coxæ paler.

ACOLOIDES BICOLOR.

Acoloides bicolor, Ashmead, Monog. N. A. Proc., p. 172.

Two type ♀ ♀ in Coll. Ashmead, from Ottawa.

ACOLOIDES SUBAPTERUS.

Acoloides subapterus, Ashmead, Monog. N. A. Proc., p. 173.

Type ♀ in Coll. Ashmead, from Ottawa. Also in my collection one ♀, obtained from moss, Ottawa; this specimen has well-developed wings.

ACOLOIDES SEMINIGER.

Acoloides seminiger, Ashmead, Monog. N. A. Proc., p. 173.

Two type ♀ ♀ in Coll. Ashmead, from Ottawa. In my collection fourteen ♀ ♀; of these two were taken near Hull on 22nd August, and the remainder obtained from moss collected at the end of November at Experimental Farm and Dow's Swamp, Ottawa.

CERATOBÆUS BINOTATUS.

Ceratobæus binotatus, Ashmead, Monog. N. A. Proc., p. 176.

Six ♀ ♀ from moss in November, Ottawa, of which two have wings. This species is superficially very similar to the preceding, but is easily separated microscopically.

BÆUS MINUTUS.

Bæus minutus, Ashmead, Monog. N. A. Proc., p. 178.

Two type ♀ ♀ in Coll. Ashmead, from Ottawa. The ♀ of this diminutive insect is quite common in moss collected in Dow's Swamp in November, and occurs also in moss from the Experimental Farm. One ♀ was taken with sweeping-net near Hull on 21st August.

BÆUS NIGER.

Bæus niger, Ashmead, Monog. N. A. Proc., p. 178.

Two ♀ ♀ from moss, Ottawa, and one at Hull, 24th September. The species is more robust and blacker than the next species.

BÆUS PICEUS.

Bæus piceus, Ashmead, Monog. N. A. Proc., p. 179.

Type ♀ in Coll. Ashmead, from Ottawa, and one ♀ in my collection. I find it difficult to separate this species from the larger specimens of *B. minutus*.

BÆUS AMERICANUS.

Bæus americanus, Howard, Insect Life, ii, p. 270, fig. 59, ♀.
Bæus americanus (How.), Ashmead, Monog. N. A. Proc., p. 179, pl. viii, fig. 9, ♂ ♀.

One ♀ captured on the under surface of a stone on 15th May, 1890, near Hull.

Tribe III.—TELEASINI.

PENTACANTHA CANADENSIS.

Pentacantha canadensis, Ashmead, Can. Ent., xx, p. 51, 1888; Monog. N. A. Proc., p. 182, pl. viii, fig. 1, ♀.

Type ♀ in Coll. Ashmead, from Ottawa. Two more ♀ ♀ taken in June.

PROSACANTHA MELANOPUS.

Prosacantha melanopus, Ashmead, Monog. N. A. Proc., p. 189.

Type ♀ in Coll. Ashmead and one ♀ in mine, from Ottawa.

PROSACANTHA PENNSYLVANICA.

Prosacantha pennsylvanica, Ashmead, Monog. N. A. Proc., p. 189.

One ♀ from moss from Dow's Swamp, Ottawa, seems to belong to this species.

PROSACANTHA CARABORUM.

Prosacantha caraborum, Riley, Ashm. Monog. N. A. Proc., p. 191, pl. vii, fig. 4, ♀.

One ♀ captured near Hull, Que., on 14th August, 1897.

PROSACANTHA LINELLII.

Prosacantha Linellii, Ashmead, Monog. N. A. Proc., p. 195.

One ♀ captured on Kettle Island, near Ottawa, 18th August, 1897.

TELEAS CANADENSIS.

Teleas canadensis, Harrington, Can. Ent., xxxi, p. 78.

Type ♀ in my collection, taken 26th August, 1894, Hull, Que.

HOPLOGRYON LONGIPENNIS.

Hoplogryon longipennis, Ashmead, Monog. N. A. Proc., p. 202, pl. viii, fig 6, ♀.

Two type ♀♀ in Coll. Ashmead, from Ottawa. Also two ♀♀, one ♂ in May, June and August, Hull and Ottawa. The antennæ of the ♂ are long and black; pedicel small, rounded; first flagellar joint slightly shorter than second, third subequal with second, slightly thickened and angulated, remaining joints subequal, slightly longer towards apex, terminal joint as long as the second. The generic description of *Hoplogryon* says of the ♂ antennæ, "flagellar joints all cylindrical, the third not angulated," but in *H. brachypterus* ♂ the third joint is also angulated.

HOPLOGRYON CLARIPENNIS.

Hoplogryon claripennis, Ashmead, Monog. N. A. Proc., p. 203.

One ♀ taken at Hull, 22nd August, 1897.

HOPLOGRYON OBSCURIPES.

Hoplogryon obscuripes, Ashmead, Monog. N. A. Proc., p. 204.

Two type ♀♀ in Coll. Ashmead, from Ottawa. Five others from moss in November, Ottawa, and by sweeping herbage, August, Hull.

HOPLOGRYON MINUTISSIMUS.

Prosacantha minutissima, Ashmead, Ent. Am., iii, p. 117, ♀.
Hoplogryon minutissimus, Ashmead, Monog. N. A. Proc., p, 202.

Twelve ♀♀ collected in August, Hull and Ottawa, agree with description, but may be only a winged form of the preceding species.

HOPLOGRYON BRACHYPTERUS.

Prosacantha brachyptera, Ashmead, Can. Ent., xx, p. 50.
Hoplogryon brachypterus, Ashmead, Monog. N. A. Proc., p. 204.

Several type ♀♀ in Coll. Ashmead, from Ottawa. This is our commonest species; numerous ♀♀ have been obtained from moss in the early winter, and also by the sweeping-net in August and September, Hull and Ottawa. Two ♂♂ were taken at Hull in July and August.

The antennæ of the ♂ are very long and slender, with long hairs; scape pale: the pedicel is rounded and slightly swollen; first flagellar joint one half longer than scape, remaining joints each subequal with scape, very slender and attenuated at extremity. The wings are long and slightly ciliated.

HOPLOGRYON SOLITARIUS.

Hoplogryon solitarius, Ashmead, Monog. N. A. Proc., p. 205.

Type ♂ in Coll. Ashmead, from Ottawa. One ♂ taken near Hull, 5th August, 1894, answers to description, but third joint of flagellum is angulated.

GRYON FLAVIPES.

Gryon flavipes, Ashmead, Monog. N. A. Proc., p. 208.

Type ♀ in Coll. Ashmead. Thirteen ♀♀ from moss in November, and by sweeping in August, Hull and Ottawa.

GRYON CLAVATUS.

Trichasius clavatus, Provancher, Add. et Corr., p. 209.
Bæus clavatus (Prov.), Harrington, Insect Life, ii, p. 359.
Bæus clavatus (Prov.), Ashmead, Monog. N. A. Proc., p. 179.

Type ♀ in my collection, from Ottawa; also two ♀♀ sifted from moss.

In referring this insect to *Bæus* (*loc. cit.*), I used only a hand lens in examining it, but having remounted it and examined it microscopically, it proves to belong to the genus *Gryon*. Except in colour the species seems almost identical with the preceding one, and may be only a pale form of it.

GRYON BOREALIS.

Acolus borealis, Ashmead, Can. Ent., xx, p. 50.
Gryon borealis, Ashmead, Monog. N. A. Proc., p. 207, pl. viii, fig. 7, ♀.

Type ♀♀ in Coll. Ashmead, from Ottawa. The ♀ occurs abundantly with the next species, Hull and Ottawa. One ♂ on 1st August, Ottawa.

The ♂ antennæ are hardly longer than the body, the joints relatively shorter and stouter than in *G. canadensis*. Abdomen more polished, legs paler, size larger.

GRYON CANADENSIS.

Acolus canadensis, Ashmead, Can. Ent., xx, p. 50.
Gryon canadensis, Ashmead, Monog. N. A. Proc., p. 207.

Type ♀ ♀ in Coll. Ashmead, from Ottawa. Females very abundant in moss and in sweepings, Hull and Ottawa. One ♂ at Hull, 7th August, 1897.

The ♂ antennæ are pubescent and very slender, much longer than the body.

GRYON COLUMBIANUS.

Gryon columbianus, Ashmead, Monog. N. A. Proc., p. 208, ♀.

Three ♀ ♀ from moss from Experimental Farm, Ottawa; one ♂, 15th August, 1897, Hull.

Tribe IV.—SCELIONINI.

CALOTELEIA MARLATTII.

Caloteleia Marlattii, Ashmead, Monog. N. A. Proc., p. 214.

Fourteen ♀ ♀ and three ♂ ♂ obtained by sweeping herbage in hickory grove, Hull. Except one ♂ taken on 9th June, 1895, all the specimens occurred toward the end of August. Individuals vary somewhat in colour; the front centrally is polished, with scattered coarse punctures, which are more numerous around mouth and eyes; central tooth of mandible very small, and almost undistinguishable in one specimen; terminal segment of ♀ narrowed and pubescent.

BARYCONUS CINCTUS.

Baryconus cinctus, Harrington, Can. Ent., xxxi, p. 79.

Three type ♀ ♀ taken with sweeping-net in sandy pasture, August, Ottawa.

BARYCONUS BICOLOR.

Baryconus bicolor, Harrington, Can. Ent., xxxi, p. 79.

Ten type ♀ ♀ and four type ♂ ♂ with above, August, Ottawa.

MACROTELEIA VIRGINIENSIS.

Macroteleia virginiensis, Ashmead, Monog. N. A. Proc., p. 218.

One ♀ and five ♂ ♂ from hickory grove, Hull, August. The specimens vary somewhat in colour of legs and of scape of antennæ; the coxæ are black, except of one ♂.

OPISTHACANTHA MELLIPES.

Opisthacantha mellipes, Ashmead, Monog. N. A. Proc., p. 221, pl. ix, fig. 4, ♀.

One ♀ from Ottawa.

HOPLOTELEIA FLORIDANA.

Baryconus floridanus, Ashmead, Ent. Am., iii, p. 118.
Hoploteleia floridana, Ashmead, Monog. N. A. Proc., p. 228, pl. x., fig. 1, ♂.

One ♀ taken at Hull, 26th August, 1894. The fifth and sixth segments of abdomen are coarsely punctured, the sixth truncate or semicircularly emarginate, with short lateral teeth ; tarsi dark, the hinder ones black.

HADRONOTUS BREVIPENNIS, *sp. nov.*

♀.—Length 1–1·2 mm. Head and thorax black, coarsely punctate, subopaque. Head transverse, wider than thorax ; lateral ocelli near eyes, which are large and not visibly pubescent ; face closely punctured, but more shining than vertex ; above the antennæ there is a polished depression, with an acute central carina ; the cheeks very closely punctulate, with delicate striæ near mouth ; mandibles rufous. Antennæ with scape pale, funicle variable and club black ; pedicel as long as joints one and two of funicle ; first funicular slightly longer than thick, second and third subequal, rounded, fourth minute and transverse ; club compact, six-jointed, the first small, remainder transverse, broad, the terminal joint conical, as long as two preceding. Thorax without indications of mesonotal furrows, finely pubescent ; scutellum semi-circular, metathorax short, angles not prominent ; legs, including coxæ, uniformly yellowish. Wings usually abbreviated ; only one ♀ has wings reaching tip of abdomen, in two or three they reach almost to tip of second segment, but in all the other specimens they extend only to, or but little beyond, the tip of first segment. Abdomen ovoid, polished, with sparse, rather long pubescence ; first and second segments faintly striate ; the second segment is longer than first and as long as all the following ; first two yellow, remainder more or less brown or black.

♂.—Resembles ♀ in coloration, but is somewhat more shining, and the wings are fully developed, extending well beyond abdomen, hyaline and subpubescent, marginal vein thickened, half as long as the oblique stigmal, postmarginal long. The antennæ are filiform, rather short and pubescent ; scape pale, pedicel slightly longer than thick, first flagellar joint as large as pedicel, second nearly as long and slightly compressed, third larger, somewhat swollen and angulated, four to nine subequal, one-third longer than thick, last joint elongate, acuminate, as long as the first.

Described from fifteen ♀♀ and two ♂♂ taken in the neighbourhood of Hull in August and September.

SPARASION PACIFICUM.

Sparasion pacificum, Ashmead, Monog. N. A. Proc., p. 239.

One ♀ and five ♂♂ of this interesting form were collected for me by Mr. C. DeBlois Green, of Osoyoos, Okanagan Valley, B. C.

SCELIO OVIVORUS.

Caloptenobia ovivora, Riley, First Rep. U. S. Ent. Comm., p. 356.
Scelio famelicus, Riley, nec. Say, Second Rep. U. S. Ent. Comm., p. 270.
Scelio ovivorus (Riley), Ashmead, Ent. Am., iii, p. 119 ; Monog. N. A. Proc., p. 243.

One ♂ taken on 15th August, 1897, at Hull, Que.

SCELIO OPACUS.

Acerota opaca, Provancher, Add. et. Corr., p. 184, ♀.
Scelio opacus (Prov.), Ashmead, Monog. N. A. Proc., p. 245.

Type ♀ in Coll. Provancher, from Cap Rouge, Que. Three ♂♂ taken in August, Hull and Ottawa.

Subfamily VI.—PLATYGASTERINÆ.

Tribe I.—INOSTEMMINI.

METACLISIS ERYTHROPUS.

Metaclisis erythropus, Ashmead, Can. Ent., xx, p. 51 ; Monog. N.A. Proc., p. 252.

Type ♀ in Coll. Ashmead, from Ottawa.

ISOSTASIUS MUSCULUS.

Isostasius musculus, Ashmead, Can. Ent., xix, p. 126 ; Monog. N. A. Proc., p. 255, pl. xi, fig. 5, ♀.

One ♀, 27th August, 1898, Ottawa.

? ISOSTASIUS ARIETINUS.

Isostasius arietinus, Provancher, Add. et Corr., p. 183, ♀.
Bæoneura arietina, Provancher, *ibid.*, p. 403.
Isostasius arietinus (Prov.), Ashmead, Monog. N. A. Proc., p. 255.

Type ♀ in Coll. Provancher, from Cape Rouge, Que. Evidently this insect is a *Ceraphronid*, and the description answers very well to *Megaspilus Harringtoni*, Ashm.

Tribe II.—PLATYGASTERINI.

AMBLYASPIS PETIOLATUS.

Amblyaspis petiolatus, Ashmead, Monog. N. A. Proc., p. 268.

Numerous ♀ and ♂ specimens apparently belonging to this species, from Hull and Ottawa, August and September. There is considerable variation in specimens, and possibly they represent more than one species.

LEPTACIS STRIATIFRONS. ?

Leptacis striatifrons, Ashmead, Monog. N. A. Proc., p. 273.

One ♂, taken on old racecourse, Ottawa, 1st August, is doubtfully referred to this species.

LEPTACIS BREVIVENTRIS.

Leptacis breviventris, Ashmead, Monog. N. A. Proc., p. 273.

Four ♀♀, three ♂♂ from Ottawa, August.

LEPTACIS FLAVICORNIS.

Leptacis flavicornis, Ashmead, Monog. N. A. Proc., p. 275.

Three ♀♀, four ♂♂ from Hull and Ottawa in August.

POLYMECUS CANADENSIS.

Ectadius canadensis, Ashmead, Can. Ent., xx, p. 51.
Polymecus canadensis, Ashmead, Monog. N. A. Proc., p. 278.

Type ♀ in Coll. Ashmead, from Ottawa. One ♀ and one ♂ taken in June near Hull.

POLYMECUS PALLIPES.

Ectadius pallipes; Ashmead, Bull. No. 1 Col. Biol. Ass., p. 9, 1895.
Polymecus pallipes, Ashmead, Monog. N. A. Proc., p. 279, pl. xii, fig. 3, ♀.

Two ♀♀ and one ♂, June, Hull, Que.

POLYMECUS NIGRIFEMUR.

Ectadius nigrifemur, Ashmead, Bull. No. 1 Col. Biol. Ass., p. 10.
Polymecus nigrifemur, Ashmead, Monog. N. A. Proc., p. 280.

One ♀ taken 13th May, Ottawa.

POLYMECUS VANCOUVERENSIS.

Polymecus vancouverensis, Ashmead, Monog. N. A. Proc., p. 281.

Type ♀ in Coll. Ashmead, collected by Rev. G. W. Taylor, Victoria, V. I. Mr. Taylor has also sent to me a ♀ and ♂ taken by him at Gabriola Island, V. I., on 12th April, 1887.

POLYMECUS PICIPES.

Polymecus picipes, Ashmead, Monog. N. A. Proc., p. 282.

Three ♀♀ taken at Hull and Ottawa in June and August. The ♀ taken in August is considerably smaller and is possibly distinct.

POLYMECUS MELLISCAPUS. ?

Polymecus melliscapus, Ashmead, Monog. N. A. Proc., p. 282.

One ♀ taken 19th June, at Ottawa, is doubtfully referred to this species.

POLYMECUS AURIPES.

Polymecus puripes, Ashmead, Monog. N. A. Proc., p. 283.

Two ♀♀ taken at Hull on 7th and 21st August.

SACTOGASTER VARIPES, *sp. nov.*

♀.—Length 0·7 mm. Black, microscopically punctate. Legs piceous, base of tibiæ and tarsi yellowish. Scape of antennæ pale. Scutellum with sharp awl-like spine; sides of metathorax and base of abdomen with silvery pubescence.

Terminal segments of abdomen forming deflexed tail, which is shorter than second segment; second segment polished, terminal segment finely punctulate.

♂.—Closely resembles ♀ except in shape of abdomen and antennæ.

Described from one ♀ and one ♂ taken in August, Hull. The female very closely resembles *S. anomaliventris*, except in the shape of second ventral segment, which is much flatter.

TRICHACIS AURIPES.

Trichasis auripes, Provancher, Add. et Corr., p. 403, ♀.
Trichasis auripes (Prov.), Ashmead, Monog. N. A. Proc., p. 297.

Type ♀ in Coll. Provancher, from Cap Rouge.

ERITRISSOMERUS PALLIPES, *sp. nov.*

♀.—Length 1·2-1·5 mm. Rufo-piceous, legs yellowish. Head broad, darker than thorax, microscopically punctate or shagreened; lateral ocelli as far from the eyes as from central one; antennæ yellow, the club dusky, the pedicel as long as first two joints of flagellum, club joints subquadrate. Thorax and abdomen rufo-piceous, petiole paler; metathorax and petiole pubescent.

♂.—Closely resembles ♀ in size and coloration. Antennæ paler; pedicel small, first joint of flagellum minute, closely joined to the swollen second joint, the two together almost egg-shaped, first joint of club small, subtriangular, the following joints quadrate, subpedicellate, terminal joint longer, acuminate.

Described from several ♀ and ♂ specimens obtained near Hull in August.

POLYGNOTUS, *sp.*

Twenty-seven specimens bred from cecidomyid galls on stems of Muhlenbergia, by Dr. Fletcher, do not seem to answer to any described species.

POLYGNOTUS VITICOLA.

Polygnotus viticola, Ashmead, Monog. N. A. Proc., p. 313.

One ♂ taken 27th August, 1878, at Hull, distinguished by the punctate ventral segments and the hairy antennæ.

POLYGNOTUS, *sp.*

Numerous specimens bred from fleshy galls formed upon the twigs of salix by Cecidomyids. Mr. Ashmead, some years ago, determined specimens of this species as *Platygaster error*, Fitch (Monog. N.A. Proc., p. 291) but although apparently our commonest species, it does not seem to me to be among those described. Other members of this genus occur, but my material is scanty and I have not had time to satisfactorily study them.

PLATYGASTER OBSCURIPENNIS.

Platygaster obscuripennis, Ashmead, Monog. N. A. Proc., p. 325.

Types ♀ and ♂ in Coll. Ashmead, from Ottawa. One ♀ and two ♂♂ also in my collection bred from galls on willows.

PLATYGASTER HERRICKII.

Platygaster Herrickii, Packard, Third Report U. S. Ent. Comm., p. 220.
Platygaster Herrickii (Pack.), Ashmead, Monog. N. A. Proc., p. 324.
Aneurhynchus aneurus, Provancher, Add. et Corr., p. 176.

Type ♂ of Provancher's species in Coll. Ashmead, from Ottawa. One ♀ and three ♂♂ also from Ottawa.

PLATYGASTER ACICULATUS?

Platygaster aciculatus, Ashmead, Monog. N. A. Proc., 326.

Six ♀♀ and two ♂♂ bred from galls of Euura and Cecidomyia on willows. The specimens do not quite answer to description, but have the pleuræ strongly aciculated, and in some other points agree fairly well.

ISOCYBUS PALLIPES.

Platygaster palliaes, Say, Cont. Maclurian Lyceum, i, p. 80; Lec. Ed. Say, i, p. 383.
Isocybus palliaes (Say), Ashmead, Monog. N. A. Proc., p. 328, pl. xiii, fig. 4.

One ♀ from Ottawa agrees very well with description; it is more densely punctured and opaque than the following species.

ISOCYBUS CANADENSIS.

Platygaster canadensis, Provancher, Add. et Corr., p. 181.
Isostasius canadensis, Provancher, *ibid.*, p. 403.
Monocrita canadensis, Ashmead, Can. Ent., xix, p. 126.
Isocybus canadensis (Prov.), Ashmead, Monog. N. A. Proc., p. 329.

Described from Ottawa specimens, and types of both sexes are in Coll. Ashmead. Twelve ♀♀ and twenty-eight ♂♂ from Ottawa district. It occurs in May, and on the 13th of that month it was very abundant, one year, about some alders near Hull. I obtained it also at Casselman on 24th May. Dr. Fletcher took two females at Brandon, Man., in July, 1895.

Individuals vary greatly in the sculpture of mesonotum and pleuræ, and somewhat in colour of legs and antennæ and in the structure of latter; all, however, seem referable to one species.

Subfamily VII.—HELORINÆ.

HELORUS PARADOXUS.

Copelus paradoxus, Provancher, Nat. Can., p. 207; Faune Ent. Can., ii, p. 540.
Helorus paradoxus, Provancher, Add. et Corr., p. 405.
Helorus paradoxus (Prov.), Ashmead, Monog. N. A. Proc., p. 331.

The two ♀ types of species were taken at Cap Rouge, Que. Two ♀♀, Ottawa, of which one was taken at Kettle Island, 18th August, 1894.

Subfamily VIII.—PROCTOTRYPINÆ.

DISOGMUS CANADENSIS, *sp. nov.*

♀.—Length 3·5 mm. Black, polished; legs rufous. Head transverse, wider than thorax, shaped much as in *P. rufogaster*, but the face somewhat more convex; clypeus and mandibles rufous, palpi yellowish; antennæ stout, rufous at base and dusky towards apex; scape short, subtriangular, pedicel annular, first joint of flagellum as long as scape and pedicel, remaining joints gradually shorter, not much longer than thick, or half as long as first, joints beyond ninth wanting (having been broken in transmission by mail). Thorax with deep mesonotal furrows, abbreviated posteriorly, scutellum polished, convex, with transverse fovea at base, between each end of fovea and base of wing a few short striæ. Metathorax rugosely foveolate, not distinctly areolated. Petiole punctured at base, striate at tip; abdomen oval, acuminate, black above, rufo-piceous at sides and beneath, cauda slender, yellow, half as long as abdomen. Wings hyaline, subpubescent; nervures brownish, the stigma elongate, more than twice as long as wide, marginal cell large, triangular, as long as stigma. Legs, including coxæ, honey-yellow, tibial spurs stout.

Described from one ♀ taken at Ottawa several years ago. The specimen was sent with other material to Mr. Ashmead, when he was writing his Monograph, and was returned labelled *P. cellaris*, n. sp.

PROCTOTRYPES CAUDATUS.

Proctotrypes caudatus, Say, Long's Sec. Exp., ii, p. 329; Sec. Ed. Say, i, p. 221.
Proctotrypes crenulatus, Patton, Can. Ent., xi, p. 64.
Proctotrypes caudatus (Say), Ashmead, Monog. N. A. Proc., p. 335, pl. xiii, fig. 7, ♀.

One ♀ from Osoyoos, Okanagan Valley, B. C. (Greene), is referred to this species.

PROCTOTRYPES RUFIGASTER.

Proctotrypes rufigaster, Provancher, Nat. Can., xii, p. 263; Faune Ent. Can., ii, p. 561.
Proctotrypes rufigaster (Prov.), Ashmead, Ent. Am., iii, p. 99; Monog. N. A. Proc., p. 336.

One ♀ and three ♂♂ recorded by Provancher (*loc. cit.*); locality not mentioned. One ♀ and five ♂♂ taken in August, Hull and Ottawa; one ♀ from Mr. J. D. Evans, Sudbury, Ont.; one ♂ taken at Winnipeg, July, 1895, by Dr. Fletcher.

PROCTOTRYPES CALIFORNICUS.

Proctotrypes californicus, Holmgren, Kongl. Sv. Freg. Eug. Resa Ins., p. 434.
Proctotrypes californicus (Holm.), Ashmead, Monog. N. A. Proc., p. 338.

One ♂ in Coll. Ashmead, from Ottawa. One ♂ from Hull, 14th August.

PROCTOTRYPES FLAVIPES.

Proctotrypes flavipes, Provancher, Nat. Can., xii, p. 264; Faune Ent. Can., ii, p. 562, ♀.

Megaspilus lucens, Provancher, Faune Ent. Can., ii, p. 808; Add. et Corr,, p. 402.

Proctotrypes flavipes, (Prov.), Ashmead, Monog. N. A. Proc., p. 338.

Type ♀ in Coll. Provancher, from Cap Rouge, Que. Specimens in Coll. Ashmead from Ottawa. Two ♀♀ and one ♂ in my collection, Hull and Ottawa, August.

PROCTOTRYPES ABRUPTUS.

Proctotrypes abruptus, Say, Bost. Jour, i, p. 278, ♀; Lec. Ed. Say, ii, p, 725,

Proctotrypes abruptus (Say), Provancher, Faune Ent. Can., ii., p. 562.

Proctotrypes abruptus (Say), Ashmead, Ent. Am., iii, p. 98; Monog, N. A. Proc., p. 339.

Eight ♀♀ captured upon Kettle Island, Ottawa, on 18th and 25th August. Provancher records ♂ and two ♀♀ from Province of Quebec.

PROCTOTRYPES OBSOLETUS.

Proctotrypes obsoletus, Say, Bost. Jour., i, p. 277, ♀; Lec. Ed, Say, ii, p. 725.

Proctotrypes obsoletus (Say), Ashmead, Ent. Am., iii, p. 98; Monog. N, A. Proc., p. 340.

One ♂ from Ottawa determined by Mr. Ashmead. A ♀ collected at Massett, Q. C. I., by Rev. J. H Keen, is doubtfully placed here. It may prove a new species on receipt of further material, as the specimen was in alcohol, with beetles, and the wings are destroyed, and it is otherwise in bad condition for determination.

PROCTOTRYPES CAROLINENSIS.

Proctotrypes carolinensis, Ashmead, Monog. N. A. Proc,, p. 341.

Thirty ♂♂ from Kettle Island, Hull and Ottawa, taken in August, appear to belong to this species. The head is thicker than in the species which precede, but not so quadrate or globose as in those which follow.

PROCTOTRYPES MEDIUS.

Proctotrypes medius, Ashmead, Monog. N. A. Proc., p. 343, ♀.

Type ♀ in Coll. Ashmead, from Ottawa. One ♂ which may belong here taken 16th August, 1894, at Hull; it is much larger than the previous species.

PROCTOTRYPES LONGICEPS.

Proctotrypes longiceps, Ashmead, Monog. N. A. Proc., p. 342.

Type ♀ in Coll. Ashmead, from Ottawa.

PROCTOTRYPES CANADENSIS.

Proctotrypes canadensis, Ashmead, Monog. N. A. Proc., p. 342.

Type ♀ in Coll. Ashmead, from Ottawa. Ten ♀♀ captured in August, Hull and Ottawa.

PROCTOTRYPES QUADRICEPS.

Proctotrypes quadriceps, Ashmead, Monog. N. A. Proc., p. 343.

Seven ♀♀ in August, from Hull and Ottawa. Differs from previous species chiefly in structure of antennæ. No males of either of these species have been taken, and it is possible that the males placed as *P. carolinensis* may, notwithstanding the difference in the shape of the head, belong to them, as they occur with them.

Subfamily IX.—BELYTINÆ.

LEPTORHAPTUS RUFUS.

Leptorhaptus rufus, Ashmead, Monog. N. A. Proc., p. 350.

Two ♀♀ and one ♂, July and August, Hull and Ottawa.

LEPTORHAPTUS CONICUS.

Leptorhaptus conicus, Ashmead, Monog. N. A. Proc., p. 350. pl, xiv, fig. 1, ♀.

One ♀ and two ♂♂, August, Kettle Island, Ottawa, Hull.

MIOTA COLORADENSIS.

Psilomma coloradense, Ashmead, Bull. No. I, Col. Biol. Ass., p. 11.
Miota coloradensis, Ashmead, Monog. N. A. Proc., p. 352.

One ♀ captured at Hull in July.

MIOTA AMERICANA.

Psilomma americana, Ashmead, Can. Ent., xix., p. 197.
Miota americana, Ashmead, Monog. N. A. Proc., 353.

Seven ♀♀ and one ♂. The ♂ was taken at Chelsea, Que., on 3rd October, and the other specimens in August, Kettle Island, Ottawa, Hull.

One ♀ was also obtained at Parrsboro', N. S., in September, 1897. This specimen was between the gills of a large agaric, which was literally a mass of dipterous larvæ. Several specimens of a species of *Eucoila* also occurred in the same fungus.

MIOTA CANADENSIS.

Miota canadensis, Ashmead, Can. Ent., xxix, p. 54.

Type ♀ in Coll. Ashmead, from Hull. Two ♂♂ which probably belong to this species were also taken near Hull in August.

MIOTA RUFOPLEURALIS.

Miota rufopleuralis, Ashmead, Can. Ent., xxix, p. 54.

Type ♀ in Coll. Ashmead, from Kings Mountain, Chelsea, Que., 12th August, 1894. Three ♀♀ taken near Gatineau River, Chelsea, on 3rd October, 1897.

SCORPIOTELEIA MIRABILIS.

Scorpioteleia mirabilis, Ashmead, Can. Ent., xxiv, p. 53.

Type ♀ in Coll. Ashmead, from Ottawa (Kettle Island), 18th August, 1894.

STYLIDOLON POLITUM.

Stylidolon politum, Ashmead, Can. Ent., xxix, p. 54.

Type ♀ in Coll. Ashmead, from Ottawa, 13th May, 1896.

ACROPIESTA FLAVICAUDA.

Acropiesta flavicauda, Ashmead, Monog. N. A. Proc., p. 354, pl. xiv, fig. 3, ♀.

Type ♀ in Coll. Ashmead, from Ottawa.

BELYTA ERYTHROPUS.

Belyta erythropus, Ashmead, Monog. N. A. Proc., p. 357.

Two ♀♀ and eight ♂♂ from Hull, Chelsea and Ottawa, August and October. One ♂ taken at Sudbury, Ont., on 12th July, 1889, by Mr. J. D. Evans.

BELYTA ROSTRATA, *sp. nov.*

♀.—Length 3·5 mm. Black, highly polished, sparsely pilose, legs honey-yellow. Head globose, narrower than thorax; eyes rather small, ocelli in equal-sided triangle; frontal prominence much produced, fully half the length of head; antennæ stout, rufous, terminal joints darker; scape stout, as long as pedicel and first four joints of flagellum; pedicel rounded, slightly longer than wide; first joint of flagellum hardly twice as long as pedicel, joints beyond moniliform, subpedicellate, gradually larger toward apex, last joint obconic; palpi pale; face polished, with grooves extending from base of mandibles almost to apex of frontal prominence, apex punctate. Mesonotal furrows and transverse furrow between tegulæ distinct; scutellum flat, fovea at base large and shallow. Metathorax smooth, with divided central and distinct lateral carinæ, posterior angles prominent. Wings hyaline, nervures pale brownish; marginal vein shorter than the closed cell; tegulæ rufous. Legs stout, honey-yellow, including coxæ. Abdomen highly polished, terminal segments more pilose; petiole longer than wide, with irregular raised lines; base of second segment with median sulcus and a few short striæ.

Described from one ♀ taken at Chelsea, Que., on the occasion of an excursion of the Ottawa Field-Naturalists' Club, on 3rd October, 1897.

The species agrees with *B. frontalis*, Ashm., in the prominent face, but the head is more globose, and the metathorax has a divided central carina.

BELYTA TEXANA.

Belyta texana, Ashmead, Monog. N. A. Proc., p. 357.

One ♀ from Hull, Que., 2nd August, 1897.

OXYLABIS SPINOSUS.

Ancurhynchus spinosus, Provancher, Faune Hym. Can., ii, p. 560.
Oxylabis spinosus, Provancher, Add. et Corr., p. 405.
Oxylabis spinosus (Prov.), Ashmead, Monog. N. A. Proc., p. 358, pl. xiv, fig. 5, ♀.

Type ♀ in Coll. Provancher, from Cap Rouge, Que. One ♀ and four ♂♂ in August, Hull, Kettle Island, Ottawa. One ♂ taken at Casselman, Ont., 24th May. The development of the post scutellar spine varies considerably.

CINETUS MELLIPES.

Belyta mellipes, Say, Bost. Jour. Nat. Hist., p. 279; Lec. Ed. Say, ii, p. 726.
Xenotoma mellipes (Say), Ashmead, Can. Ent., xix, p. 199.
Cinetus mellipes (Say), Ashmead, Monog. N. A. Proc., p. 361, pl. xiv, fig. 6, ♀.

Three ♀♀ and five ♂♂, Hull, Ottawa, Kettle Island, August; Chelsea, October.

CINETUS SIMILIS.

Cinetus similis, Ashmead, Monog. N. A. Proc., p. 361.

One ♀ at Hull, 16th August, 1894; one ♀ from Mr. J. D. Evans, Trenton.

XENOTOMA XANTHOPUS.

Xenotoma xanthopus, Ashmead, Monog. N. A. Proc., p. 363.

One ♀ collected on 15th August, 1897, near Hull, Que.

XENOTOMA MANDIBULARIS.

Xenotoma mandibularis, Ashmead, Monog, N. A. Proc., p. 363, pl. xiv, fig. 7, ♀.

One ♀ taken 29th July, 1894, at Hull.

ZELOTYPA LONGICORNIS.

Zelotypa longicornis, Ashmead, Monog. N. A. Proc., p. 365, pl. xv, fig. 1, ♂.

One ♀ from Ottawa in Coll. Ashmead.

ZELOTYPA FLAVIPES. ?

Zelotypa flavipes, Ashmead, Monog. N. A. Proc., p. 365.

Two ♂♂ captured at Ottawa in August have been so determined by by Mr. Ashmead; the mandibles are, however, acute, crossing each other at tips, as in the genus Pantoclis.

ZELOTYPA FUSCICORNIS.

Zelotypa fuscicornis, Ashmead, Can. Ent., xxix, p. 55.

Type ♂ in Coll. Ashmead, from Hull, 23rd July.

PANTOCLIS SIMILIS.

Pantoclis similis, Ashmead, Can. Ent., xxix, p. 55.

Type ♂ in Coll. Ashmead, taken 5th August, 1894, at Hull. Fourteen ♀♀ and twelve ♂♂ from Ottawa district. The species was abundant near Chelsea on 3rd October, 1897, and specimens have also been taken in August and September near Hull, on Kettle Island, and near the city.

PANTOCLIS CANADENSIS.

Pantoclis canadensis, Ashmead, Can. Ent., xxix, p. 55.

Type ♀ in Coll. Ashmead, from Ottawa, 13th August, 1894. One ♀ and three ♂♂ which seem to belong to this species, from Hull and Ottawa, in June and August.

PANTOCLIS ANALIS.

Pantoclis analis, Ashmead, Monog. N. A. Proc., p. 370, pl. xv, fig. 2, ♀.

One ♀ from Hull, 22nd August, 1897; larger and more robust than the previous species.

PANTOCLIS CRASSICORNIS?

Pantoclis crassicornis, Ashmead, Monog. N. A. Proc., p. 369.

One ♀ from Hull, 16th August, 1894.

PANTOCLIS MANDIBULARIS, *sp. nov.*

♀.—Length 3 mm. Black, polished, with rather long sparse pubescence. Head transverse; palpi and mandibles pale, the latter long, crossing at tips. Antennæ, with scape and pedicel, yellowish, beyond black; pedicel not much longer than thick; first joint of flagellum about three times as long as pedicel; joints two, three and four decreasing slightly in length, five much shorter, but longer than six, which is subequal with pedicel; remaining joints moniliform, subpedicellate; eight and nine are the stoutest, and beyond these the joints are more elongate and slenderer, oval instead of spherical, the terminal pointed, as long as the fifth. Wings hyaline, nervures brownish; marginal vein longer than first abscissa of radius, marginal cell twice as long as the marginal vein. Legs yellow, the hind tibiæ and tarsi slightly darker. Tegulæ pale. Petiole of abdomen stout, strongly fluted; abdomen short and stout, slightly recurved at tip, the second segment piceous at base.

Described from one ♀ captured near Hull on 22nd August, 1897. The mandibles are larger than in our other species of *Pantoclis*, but the structure of the antennæ seems to separate it from *Xenotoma*, to which I was at first disposed to refer it. The antennæ differ from those of our other species of *Pantoclis* in being stoutest in middle of flagellum, and perceptibly slenderer towards apex.

ZYGOTA AMERICANA.

Zygota americana, Ashmead, Monog. N. A. Proc., p. 373, pl. xv, fig. 3, ♂.

Types ♀ ♂ in Coll. Ashmead, from Ottawa. Forty ♀♀ and twenty ♂♂ from various localities in Ottawa district, occurring from May to October. One ♂ from Mr. J. D. Evans, which he captured at Sudbury in 1892.

The species, like the majority of our *Proctotrypids*, occurs most frequently in August, but in 1894 it was abundant in Hull on the 15th July, and on the 3rd October, 1897, it was common near Chelsea. One ♂ was taken as early as the 21st May. Individuals vary much in size,

from 2·5 mm. to 4·5 mm., and the antennæ of the females also show marked variations in the length of the joints. All the specimens, however, seem referable to a single species.

ACLISTA CAUDATA, *sp. nov.*

♀.—Length 2·6-3 mm. Head and thorax black, abdomen subrufous, legs yellow. Head subglobose, polished; frontal prominence and occiput with dense pubescence. Antennæ moderately stout, pubescent, honey-yellow, with terminal joints dusky; scape long, extending far beyond ocelli, as long as pedicel and four joints of flagellum; pedicel nearly twice as long as thick, first joint of flagellum as long as pedicel but more slender, joints two to six subequal, about as long as thick, joints beyond moniliform, gradually enlarged, last joint large, but little smaller than the two preceding. Clypeus and mandibles rufous, palpi pale yellowish. Thorax black, sparsely pubescent, scutellum convex, with large circular fovea at base; tegulæ rufous or rufo-piceous; pleuræ impressed. Legs stoutly clavate, honey-yellow. Wings with yellowish tinge, nervure pale brown, marginal vein thickened, more than twice as long as thick, stigmal short. Abdomen rufous or rufo-piceous, darker at base and apex, petiole short and stout, rugose and pubescent, ovipositor exerted, yellow, 1 mm. in length.

♂.—Abdomen darker. Antennæ long, filiform; scape a little longer than the pedicel and first joint of flagellum; pedicel one-half longer than thick; joints of flagellum subequal, about three times as long as wide; the first excised at base, the last a little longer than the others.

Described from six ♀♀ and three ♂♂ taken near Hull, as follows: One ♀, 5th August, 1890; one ♀, 24th July, 1897; two ♀ and one ♂, 2nd August; one ♀ and one ♂, 7th August; one ♀ and one ♂, 14th August, 1897. Two females of this species were also, some time ago, sent to Mr. Ashmead, who considered them referable to *A. missouriensis*, but the male differs slightly from his description, which states that the first flagellar joint is as long as the scape, while in my specimens it is only about two-thirds as long. Mr. Ashmead also considers the exerted ovipositor as only accidental, but the eight females, obtained on different dates, all have it exerted, of a length almost fully equal to that of the abdomen, whereas such a protrusion seems of very rare occurrence in other members of the family; only a few instances occur in my collection.

ACLISTA BOREALIS.

Aclista borealis, Ashmead, Monog. N. A. Proc., p. 378.

Type ♀ in Coll. Ashmead, from Ottawa. Also one ♀ taken 20th May, 1894, and one ♀ obtained from moss collected on Central Experimental Farm Ottawa, in November. One ♂ which seems to agree with these was taken at Chelsea, 3rd October, 1897; the antennæ are slender, the pedicel a little longer than in the preceding species, the apex of the scape beneath is obliquely prolonged into a prominent triangular spine, but this may be only an individual, not specific, character; the legs are piceous, with the articulations paler. One ♀ received from Mr. W.

Metcalfe, labelled Toronto, 3rd March, 1894, apparently belongs to this species, but is not in very good condition for determination.

ACLISTA RUGOSOPETIOLATA.

Aclista rugosopetiolata, Ashmead, Monog. N. A. Proc., p. 377.

Two ♀♀ from Hull, 22nd August, 1897. The fovea at base of scutellum is crescent-shaped, instead of consisting of two foveæ connected by a grooved line.

ACLISTA CRASSICORNIS, *sp. nov.*

♂.—Length 3 mm. Black, polished; abdomen rufo-piceous. Head more transverse and more narrowed behind the eyes than in the preceding forms. Antennæ rúfous, very stout; scape as long as pedicel and second joint; pedicel rounded, scarcely longer than thick; flagellar joints about twice as long as thick, gradually shorter, the penultimate one-half longer than thick; last joint more slender, as long as the first. Wings subhyaline, nervures pale; marginal vein thickened, about four times as long as thick; stigmal vein short, almost at right angle, a fuscous streak indicating a long open marginal cell. Fovea at base of scutellum large, circular. Legs stout, honey-yellow, Abdomen rufo-piceous

Described from one ♂ from Ottawa in my collection.

This specimen was first considered to be ♂ of *A. rugosopetiolata*, but the shape of the head and the arrangement of ocelli is different, as well as the shape of fovea at base of scutellum, and the wing venation; it is also more robust in facies.

PSILOMMA COLUMBIANUM.

Psilomma columbianum, Ashmead, Monog. N. A. Proc., p. 379, pl. xv, fig. 5, ♀.

Two ♀♀ taken at Chelsea, 3rd October, 1897.

ANECTATA HIRTIFRONS.

Anectata hirtifrons, Ashmead, Can. Ent., xix., p. 198.

Anectata hirtifrons, Ashmead, Monog. N. A. Proc., p. 382, pl. xv, fig. 8, ♀.

Type ♀ in Coll. Ashmead, from Ottawa. Two ♀♀ taken 28th July and 13th August, 1894.

Subfamily X.—DIAPRIINÆ.

Tribe I.—SPILOMICRINI.

HEMILEXIS SUBEMARGINATA.

Hemilexis subemarginata, Ashmead, Monog. N. A. Proc., p. 389, pl. xvi, fig. 4, ♀.

One ♀ from Ottawa agrees very well with the description of this species, except in the absence of the abbreviated mesonotal furrows.

PARAMESIUS CLAVIPES.

Paramesius clavipes, Ashmead, Can. Ent., xx, p. 53; Monog. N. A. Proc., p. 393.

Type ♀ in Coll. Ashmead, from Ottawa. Seven ♀♀ and six ♂♂ from Hull, Kettle Island and Ottawa, all taken in August, except one ♀

which was obtained from moss in November. One ♀ from Mr. W. Metcalfe, labelled Toronto, 8th January, 1895.

In some Ottawa material received from Mr. J. A. Guignard, and which was determined by Provancher, I find a ♀ and ♂ of this species labelled *Aneurhynchus foveatus*, Prov.

PARAMESIUS OREGONENSIS.

Paramesius oregonensis, Ashmead, Monog. N. A. Proc., p. 395.

One ♀, two ♂♂, from Ottawa in August. A larger and more robust species.

SPILOMICRUS ATRICLAVUS.

Spilomicrus atriclavus, Ashmead, Monog. N. A. Proc., p. 398.

Type ♀ in Coll. Ashmead, from Ottawa. Nine ♀♀ and four ♂♂ from Hull, August, and one ♂ from Casselman, 24th May, 1895. These specimens vary considerably, and some answer fully to description of *S. armatus*, but all seem referable to one species. Some have mesonotal furrows complete, two have the furrows abbreviated anteriorly, and the remainder are without furrows. There is also some slight variation in the antennæ.

SPILOMICRUS FLAVICORNIS.

Spilomicrus flavicornis, Ashmead, Monog. N. A. Proc., p. 398, pl. xvi, fig. 7, ♀.

One ♀ taken 27th July, 1894, at Hull, Que. Quite distinct from the preceding by its smaller size and paler legs and antennæ.

SPILOMICRUS LONGICORNIS.

Spilomicrus longicornis, Provancher, Nat. Can., xii, p. 262; Faune Ent. Can., ii, p. 561, ♀; Ashmead, Monog. N. A. Proc., p. 399.
Paramesius longicornis, Provancher, Add. et Corr., p. 405.

The type of this species was probably from Cap Rouge, but the exact locality is not stated by the author, who merely refers to the species as rare. As Mr. Ashmead observes, it is not a Diapriid and is probably a Belytid.

SPILOMICRUS FOVEATUS.

Spilomicrus foveatus, Provancher, Add. et Corr., p. 176, ♀.
Aneurhynchus foveatus, Provancher, *ibid.*, p. 404.
Spilomicrus foveatus (Prov.), Ashmead, Monog. N. A. Proc , p. 399.

Type of species in Coll. Provancher, from Cape Rouge, Que. As pointed out by Ashmead, the description is not that of a Spilomicrus, and the insect is perhaps *Paramesius clavipes;* see note on that species.

HEMILEXODES CANADENSIS, *sp. nov.*

Length 1·2 mm. Black, impunctured. Antennæ thirteen-jointed, slender, gradually incrassated; scape and pedicel honey-yellow, flagellum gradually darker, terminal joints black; scape long, pedicel swollen, but twice as long as thick;

flagellar joints one to five slender, subequal, all longer than the pedicel; beyond gradually short and stouter, suboval, last joint longest. Thorax without furrows; a transverse fovea at base of scutellum, which has a row of punctures at tip; metathorax yellowish, with prominent carina. Legs entirely pale honey-yellow. Wings broad, subemarginate at apex, faintly yellowish, nervure and stigma yellow, no trace of basal nervure. Abdomen ovate, black, petiole pale, longer than thick, striated and pubescent.

Described from one ♀ taken 2nd August, 1897.

Another ♀ from moss from Experimental Farm has metathorax darker and carina less prominent; antennæ darker and femora piceous.

ANEURHYNCHUS MELLIPES.

Aneurhynchus mellipes, Ashmead, Can. Ent., xx, p. 52; Mon. N. A. Proc., p. 404.

Type ♀ in Coll. Ashmead, from Ottawa. Ten ♀♀ and three ♂♂ taken; at Casselman (♂), 24th May; Hull and Ottawa, July to September; Chelsea, 3rd October.

The antennæ of the ♂ are rufous; scape as long as first joints of flagellum; pedicel rounded; first flagellar joint only a little longer, second as long as pedicel and first united, or a little more than twice as long as thick, remaining joints subequal, slightly longer, but not more than three times as long as thick. There is some variation in size and structure of the females, but not indicating more than one species, although a second species seems to occur here, as indicated by the following male.

ANEURHYNCHUS FLORIDANUS.

Aneurhynchus floridanus, Ashmead, Monog. N. A. Proc., p. 405; pl. xvii, fig. 4.

One ♂ taken upon Kettle Island, Ottawa, 25th August, 1894. In this species the antennæ are longer, the first funicular joint being twice as long as pedicel, and subequal with the following.

ANEURHYNCHUS INERMIS.

Aneurhynchus inermis, Provancher, Add. et Corr., p. 176.
Pantoclis inermis, Provancher, *ibid.*, p. 405.
Pantoclis inermis (Prov.), Ashmead, Monog. N. A. Proc., p. 448.

Type ♀♀ in Coll. Provancher, from Cap Rouge and Ottawa. I have received from Mr. J. A. Guignard a ♀ so labelled, as determined by Provancher, and which seems to me identical with *A. mellipes*.

Tribe II.—DIAPRIINI.

GALESUS QUEBECENSIS.

Galesus quebecensis, Provancher, Faune Hym. Can., ii, p. 559, ♂.
Galesus quebecensis (Prov.), Ashmead, Can. Ent., xix, p. 195; Monog. N. A. Proc., p. 409, ♀♂.

The species was described from two males (locality not mentioned), and this sex seems most abundant. Seven ♂♂ from Hull, Chelsea and

Ottawa, in July, August and October. These vary in size from 3-5 mm.; the large ones have the coxæ, scape and pedicel black; one small specimen has coxæ, scape, pedicel and first flagellar joint red, remainder of flagellum dusky; another has the legs mostly piceous and the antennæ entirely black.

GALESUS ATRICORNIS.

Galesus atricornis, Ashmead, Monog. N. A. Proc., p. 409.

Type ♀ in Coll. Ashmead, from Ottawa. One ♀ taken in the city, 3rd October, received from Mr. J. A. Guignard.

GALESUS POLITUS.

Coptera polita, Say, Bost. Jour. Nat. Hist., i, p. 282; Lec. Ed. Say, ii, p. 728.
Coptera polita (Say), Provancher, Add. et Corr., p. 182,
Entomacis polita (Say), Provancher, *ibid.*, p. 404.
Galesus politus (Say), Ashmead, Monog. N. A. Proc., p. 410.

The ♀ of this species is recorded by Provancher as received from Ottawa.

GALESUS PILOSUS.

Galesus pilosus, Ashmead, Monog. N. A. Proc., p, 411.

One ♀ which seems to belong to this species received from Dr. Fletcher, who captured it at Brandon, Man., in July, 1875.

LOXOTROPA RUFICORNIS. ?

Loxotropa ruficornis, Ashmead, Monog. N. A. Proc., p. 414, pl. xvii, fig. 8.

One ♀ taken 13th August, 1894, Ottawa. Distinct from the following species by the angulated face, but lacks the mesonotal furrows mentioned in description.

LOXOTROPA ABRUPTA.

Basalys abrupta, Thomson, Ofv., p. 368, ♀.
Loxotropa abrupta (Thoms.), Ashmead, Can. Ent., xx, p. 54; Monog. N. A Proc., p. 414.

Four ♀♀ and one ♂ from Hull and Ottawa in August. One of these females was determined for me by Mr. Ashmead; the others are slightly smaller, but seem to fully agree with description, except that one, with exception of the black head, is entirely rufous, including club of antennæ.

LOXOTROPA FLAVIPES.

Loxotropa flavipes, Ashmead, Monog. N. A. Proc., p. 415.

Seven ♀♀ in August from Kettle Island, Ottawa, Kings Mountain and Hull.

LOXOTROPA CALIFORNICA. ?

Loxotropa californica, Ashmead, Monog. N. A. Proc,, p. 415.

Two ♀♀, Hull, 14th August, 1897, and from moss, November, 1897, Ottawa.

LOXOTROPA NANA.

Loxotropa nana, Ashmead, Monog. N. A. Proc., p. 415.

Four ♀♀ from Hull and Ottawa in August. Distinguished by the narrow, abbreviated wings and partly rufous body.

LOXOTROPA PEZOMACHOIDES.

Loxotropa pezomachoides, Can. Ent., xx, p. 53; Monog. N. A. Proc., p. 416.

Type ♀♀ in Coll. Ashmead, from Ottawa. Four ♀♀ in my own collection, obtained, like so many of these apterous forms, from moss in early winter.

TROPIDOPRIA CONICA.

Ichneumon conicus, Fabricius, Ent. Sys., ii, p. 188; Linn. Ent., iii, p. 212.
Tropidopria conica (Fabr.), Ashmead, Monog. N. A. Proc., p. 418, pl. xxiii, fig. 1, ♀.

♀ in Coll. Ashmead, from Ottawa; also ♀ in my collection, taken 12th June.

TROPIDOPRIA CARINATA.

Diapria carinata, Thomson, Ofv., 1858, p. 361.
Tropidopria carinata (Thoms.), Ashmead, Monog. N. A. Proc., p. 418.

♀ in Coll. Ashmead, from Ottawa, also ♀ in my collection (determined by Mr. Ashmead), and one ♂, which, although smaller, seems referable to this species; it was taken 14th August, 1897, at Hull.

TROPIDOPRIA TORQUATA.

Platymischus torquatus, Provancher, Add. et Corr., p. 182.
Tropidopria torquata (Prov.), Ashmead, Monog. N. A. Proc., p. 419.

Type ♀ in Coll. Ashmead; recorded also by Provancher from Cap Rouge, Que. One ♀ taken on 24th September, 1897, at Hull, Que.

TROPIDOPRIA SIMULANS.

Tropidopria simulans, Ashmead, Monog. N. A. Proc., p. 419.

Two ♀ types in Coll. Ashmead, from Ottawa. This is decidedly our commonest species, as over thirty ♀♀ have been taken in the vicinity of Ottawa in August; no males have, however, so far occurred.

DIAPRIA ERYTHROPUS.

Diapria erythropus, Ashmead, Monog. N. A. Proc., p. 423.

One ♀ from moss collected in November at Experimental Farm, Ottawa.

DIAPRIA ARMATA.

Diapria armata, Ashmead, Can. Ent., xx, p. 53; Monog. N. A. Proc., p. 425.

Type ♀ in Coll. Ashmead, from Ottawa. Two ♀♀ taken 7th August, 1897, near Hull, answer well to description, except that last joint of

antennal club is much smaller. One ♂ taken in same locality, a week later, may also belong to this species, of which the ♂ is not described.

DIAPRIA COLON.?

Psilus colon, Say, Bost. Jour. Nat. Hist., i, p. 284; Lec. Ed. Say, ii, p. 729.
Diapria colon (Say), Ashmead, Monog. N. A. Proc., p. 425.

Two ♀♀ and three ♂♂. One ♀ was from moss, the other specimens collected at Hull and Ottawa in August. The female is smaller than preceding species. The antennæ of ♂ are less nodose and the whorls of hairs much less conspicuous.

DIAPRIA VIRGINICA.

Diapria virginica., Ashmead, Monog. N. A. Proc., p. 426.

Seven ♀♀ and eight ♂♂ from Hull and Ottawa in August. The male of this species is not described, but my specimens seem, by their size and coloration, to correlate to the females so determined for me by Mr. Ashmead.

DIAPRIA APICALIS.

Psilus apicalis, Say, Bost. Jour. Nat. Hist., i, p. 283; Lec. Ed. Say, ii, p. 729.
Diapria apicalis (Say), Provancher, Add. et Corr., p. 175.
Diapria apicalis (Say), Ashmead, Monog. N. A. Proc., p. 428.

Provancher records (*loc. cit.*) a ♀ of this species from Cap Rouge, Que., but his description of the specimen is not that of a member of this genus.

CERATOPRIA MEGAPLASTA.

Ceratopria megaplasta, Ashmead, Monog. N. A. Proc., p. 430.

Type ♀ in Coll. Ashmead, from Ottawa.

CERATOPRIA INFUSCATIPES.

Ceratopria infuscatipes, Ashmead, Monog. N. A. Proc., p. 431, pl. xviii, fig. 3, ♀

Type ♀ in Coll. Ashmead, from Ottawa. Three ♀♀ from Hull and Ottawa in August.

TRICHOPRIA CAROLINENSIS.

Trichopria carolinensis, Ashmead, Monog. N. A. Proc., p. 434.

One ♀ from moss, collected in Dow's Swamp, Ottawa.

TRICHOPRIA HARRINGTONII.

Loxotropa Harringtonii, Ashmead, Can. Ent., xx, p. 53.
Trichopria Harringtonii, Ashmead, Monog. N. A. Proc., p. 435.

Type ♀ in Coll. Ashmead, from Ottawa.

PHÆNOPRIA SCHWARZII.

Phænopria Schwarzii, Ashmead, Monog. N. A. Proc., p. 439.

One ♀ from Ottawa.

PHÆNOPRIA MINUTISSIMA.

Phænopria minutissima, Ashmead. Monog. N. A. Proc., p. 438.

One ♀ taken at Hull, 24th September, 1897.

PHÆNOPRIA HÆMATOBIÆ.

Phænopria hæmatobiæ, Ashmead, Monog. N. A. Proc., p. 438.

Five ♀♀ taken at Ottawa; of these four were from moss from Dow's Swamp in November, the other was captured 27th August, 1898.

PHÆNOPRIA APTERA.

Phænopria aptera, Ashmead, Monog. N. A. Proc., p. 439.

Type ♀♀ in Coll. Ashmead, from Ottawa. A very common species in moss in early winter; about fifty specimens taken by sifting; also two with sweeping-net at Hull, 27th August, 1898.

MONELATA HIRTICOLLIS.

Monelata hirticollis, Ashmead, Can. Ent., xx, p. 54; Monog. N. A. Proc., p. 442.

Type ♀ in Coll. Ashmead, also one ♀ in my collection; both taken from moss, Ottawa.

BASALYS FUSCIPENNIS.

Basalys fuscipennis, Ashmead, Monog. N. A. Proc., p. 444.

Two ♀♀. One taken at Hull, 7th August, 1897, the other at Experimental Farm, Ottawa, 3rd September, 1898.

BASALYS RUFICORNIS.

Basalys ruficornis, Provancher, Nat. Can., xii, p. 261; Faune Ent. Can., ii, p. 560.

Basalys ruficornis (Prov.), Ashmead, Monog. N. A. Proc., p. 445.

Provancher records a ♂ from Quebec (locality not mentioned). His description seems rather to indicate a member of the genus Belyta.

IX.—*Recent Additions to the List of Injurious Insects of Canada.*

By JAMES FLETCHER, LL.D., F.L.S.

(Read May 25, 1899.)

Hardly a year passes but some new name is added to the list of those insects which attack to a noticeable extent our various cultivated crops.

In 1869, the late Dr. C. V. Riley began to publish his remarkable series of Reports on the Noxious Insects of Missouri, and for many years, as indeed to a large extent it is to-day, this was the most reliable and important source of reference for all who required information upon injurious insects and the best way to control their ravages.

In 1883, Dr. William Saunders published his most useful book on *Insects Injurious to Fruits*—a work which has been of enormous value to the fruit growers of Canada and the United States in preventing loss in their fruit crops.

In 1870, one year later than Riley began to publish his Missouri reports, through the energy of Dr. Wm. Saunders, the Rev. C. J. S. Bethune and Mr. E. Baynes-Reed, the first *Report of the Entomological Society of Ontario* appeared. This series then begun has been issued regularly ever since and is a compendium of most useful information concerning the injurious insects of Canada, but particularly of the Province of Ontario. *The Canadian Entomologist*, a monthly magazine, also published by the Entomological Society of Ontario, contains many articles of interest to the practical agriculturist and horticulturist; but this publication is more scientific in character than the Reports of the society.

From various causes it would appear that injurious insects are more numerous now than was formerly the case, not only in the number of kinds which occasionally attack crops to a serious extent, but actually in the number of the individuals which appear. The increase in the numbers of different species is affected to a large measure by the destruction of the native food supply incident upon the clearing up of the forest lands and in the draining of bogs, swamps and marshes. In addition to those indigenous insects which develop into crop pests, owing to their natural food-supply being reduced in quantity, there are introduced from time to time, foreign insects from other countries. These, too, in the past have proved to be by far the worst enemies of the farmer and gardener.

The general rule which controls the amount of insect occurrence is the extent of the food-supply; consequently, those insects which are very exclusive in their diet—and there are many such,—or those which feed upon rare plants or upon little grown crops, are correspondingly less abundant than those which have a large range of food plants or which find suitable food in the crops most widely cultivated.

In a state of nature, we find that there are few insects which are not held back from disproportionate increase by special enemies. These latter are naturally, when only normally abundant, far fewer than the hosts at whose expense they live; but with the undue increase of their hosts the parasitic species very soon multiply rapidly and restore again the balance of the ratio of occurrence.

When an insect is introduced accidently into a distant country, the chances are very remote of the special parasites which attack it in its native land, being also introduced with it, and, as a result, these foreign species are liable to become serious enemies. In rare instances this has been remedied by the subsequent artificial introduction of parasites.

During the fifteen years which have elapsed since the publication of Saunders's *Insects Injurious to Fruits*, many species of insects have occurred in Canada as enemies of fruits and other crops, and records have appeared in various publications.

It has been thought that an annotated list of these might be of interest; the present paper has therefore been prepared and is submitted herewith. With the mention of each injurious insect will be found notes as to the time of the first recorded appearance of the insect, and the best remedies that the experience of many workers has enabled us to devise. These notes are grouped under the heads of the different classes of crops attacked. It may further be noticed that some of these insects are not actually new additions to the list of injurious crop pests, but new facts of importance having been discovered concerning them it seems advisable to include them here.

Cereals.

The enemies of small grains have received few accessions, but there have been remarkable changes in the amount of injury in various years from the well known pests of these crops. The Hessian Fly, the Joint-worms and the Wheat-stem Maggot have not been for some years, except in very restricted areas, sources of serious loss to the grain crops. The Wheat Midge, at one time a terrible pest throughout the Dominion, is now restricted to a narrow strip in the Niagara peninsula, where it

broke out in 1898, and to a few places where it occurs sparsely in the Maritime Provinces.

Two important new enemies of cereals have appeared and require mention here, viz., the American Frit-fly and the Wheat-stem Sawfly. The American Frit-fly (*Oscinis carbonaria*, Loew.), a native insect, is described and the life history given in the report of the Dominion Experimental Farms for 1890 (under the name of *Oscinis variabilis*). Remedies: These are the same as those for the Hessian fly, the life history of the two insects being similar, viz., (1) Late sowing of fall wheat; (2) Harrowing of stubbles (or in the West the burning over or ploughing down deeply of stubbles); (3) Applications of special fertilizers in spring.

Fig. 1.—The American Frit-fly—enlarged.

The Wheat-stem Sawfly (*Cephus pygmœus*, L.).—A remarkable Canadian outbreak was that of the Wheat-stem Sawfly. In 1889, Prof. Comstock published a bulletin from Cornell University describing an occurrence of this insect on the College farm at Ithaca, N.Y., in which nearly 5 per cent of the wheat in a field was infested. In 1887, Mr. W. H. Harrington took a specimen of the fly at Ottawa, Canada, and received specimens from Buffalo, N.Y., in June, 1888 and 1889. In July, 1895, the writer collected specimens of the perfect insect at Indian Head, N.W.T., but, with the exception of the injury at Ithaca, N.Y., no record was made of injury to grain crops until 1896, when Mr. Wenman, of Souris, Manitoba, found larvæ injuring wheat in his own fields and those of some of his neighbours, from which the sawflies were bred the following summer. (Rep. Exp. Farms, 1896, p. 229.) Remedies: As nearly all the larvæ pass the winter in the bases of the straw, the most practical remedy is found in the treatment of infested stubble by burning it over before the flies emerge in the following spring.

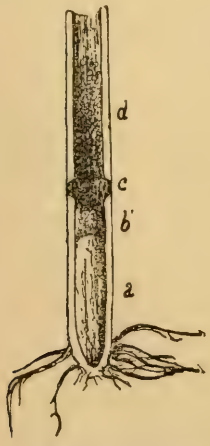

Fig. 2.—Base of straw infested by *Cephus pygmœus*: (*a*) cocoon; (*b*) plug of borings; (*c*) circular cut; (*d*) scattered borings.
(Figure kindly lent by Prof. J. H. Comstock.)

The Amputating Brocade Moth (*Hadena arctica*, Boisd.)—The caterpillar of this moth is one of the well-known cutworms, and, although normally, as indicated by its pallid colour, a subterranean feeder upon the roots and lower stems of various members of the Grass Family, has also the habit of occasionally becoming a Climbing Cutworm, sallying forth at night

and attacking many plants, even having been detected as a marauder in fruit orchards. In 1895 the moths of this species were observed in enormous numbers in several parts of Western Ontario, and complaints were received of their swarming into houses, where they gave annoyance by soiling clothes and curtains, and also by dying in large numbers in shop windows. As was to be expected, the caterpillars were very numerous and destructive in the same districts during the following summer, large areas of wheat, oats and corn being so injured that they were ploughed up.

No practical remedy has yet been devised, for wide application, against insects which attack cereal crops when growing in the field; but, by studying the life history of each species and thus becoming acquainted with the exact time at which it will finish its growth and cease its injuries, much may be done to escape unnecessary loss by making the fullest use of land at the time when there is no longer any danger in planting. In some instances where fields were stripped bare by these caterpillars, the owners were advised to sow the land again with suitable crops during the second week in June, and, as a result, instead of the fields remaining unprofitable for the rest of the year, as was the case in many places, these farmers obtained good returns. A method of clearing land infested by cutworms, the value of which is now getting to be recognized more widely by farmers, is the turning in of turkeys and other poultry. A full appreciation of the value of the work done by these birds will certainly have a good effect by opening the eyes of farmers to the good services which are year by year rendered by the flocks of wild birds whose visits to fields under cultivation are too often misunderstood.

The Pea Moth (*Semasia nigricana*, Steph.).—For many years housekeepers have known that garden pease were seriously attacked by the small caterpillars of a moth, and, unless care was taken in shelling pease, some of these "worms" were sure to appear on the table. As far as I can learn, nothing was published upon the habits of this insect of which these "worms" were the caterpillars, until 1894, when the first of several articles concerning it appeared (Rep. Exp. Farms, 1894). From the time of the year at which the perfect moth emerges, it would seem that the early planting of peas of an early variety, is the best way to avoid loss from this insect; but up to the present, beyond the breeding of the moth from half-grown caterpillars, little

Fig. 3.—The Pea Moth—natural size and enlarged.

is known of the habits of the species. Experiments are now being carried on with the view of discovering practical means of avoiding loss.

Root Crops and Vegetables.

The Bean Aphis or Black Dolphin (*Aphis rumicis*, L.).—The Broad or Windsor Beans and Horse Beans are not grown to any extent in Canada. A few years ago (1892), however, an effort was made to introduce Horse Beans into cultivation for use as a highly nitrogenous fodder plant. It was not long (1894) before the well-known pest of the Broad and Horse Beans, the "Black Dolphin" of English farmers, made its appearance, and was one of the causes which prevented these useful plants from being much more widely grown in this country. At the same time (1894) the bean plants were severely attacked by a native leaf-hopper, the Bean Thrip (*Empoa fabæ*, Harr.), which occasionally does slight injury to the field beans ordinarily cultivated.

Fig. 4.—Bean Aphis—natural size and enlarged.

The Bean Weevil (*Bruchus obtectus*, Say).—The latest addition to the insect enemies of the Canadian farmer is the Bean Weevil (Rep. Exp. Farms, 1898), which not only destroys the seeds while in the pod in the fields, but also propagates among the dry grain when stored. It is hardly likely that this will ever become a regularly occurring pest, but like the grain and rice weevils (*Calandra*), it will appear at intervals and then be lost sight of. The best remedy for this insect, as with the well known Pea Weevil (*Bruchus pisorum*, L.), which in many points has a similar life history, is the destruction of the weevils inside the seeds as soon as possible after the crop is harvested. Fumigation with bisulphide of carbon is the best treatment in every way. It must not be forgotten that this liquid and its vapour are very dangerous to use, owing to their extreme inflammability. The most convenient way to fumigate seed is to place it in an ordinary coal oil barrel and pour on the beans one ounce of the bisulphide of carbon for every 100 pounds of grain, then close the barrel tightly, first with a wet canvas or cloth, and, on the top of this, with boards which should be left undisturbed for two days at least.

The Turnip Aphis (*Aphis brassicæ*, L.).—Of late years serious injury has been done to crops of turnips and other members of the cabbage family by the European enemy of these plants, which in this country is now very generally known as the Turnip Aphis. Although occurring injuriously for many years, the first published reference seems to have been in 1885 (Rep. Hon. Ent. Dept. Agric. Can., 1885). The smooth-leaved varieties of turnips suffer most, and, as a rule, little is done by turnip growers to check its ravages, which are frequently considerable. Much, however, can be done by those who will consider the habits of the species. Generally, these plant-lice make their appearance in the fields in small and widely separated colonies, just about the time when turnips are being thinned out. Good results may therefore be obtained if the men when thinning will be on the lookout for these incipient colonies and destroy them by simply hoeing out the infested plants and, having pulled some earth over them with the hoe, then press it down firmly with the foot. When the plant-lice are too numerous for this simple treatment, the turnips should be promptly sprayed with a knapsack sprayer, using as an insecticide a one to nine dilution of the ordinary kerosene emulsion, or a wash of the so-called whale-oil soap, one pound in six gallons of water.

Fig. 5.—Turnip Aphis—enlarged.

The Red Turnip Beetle (*Entomoscelis adonidis*, Fab.).—In 1885 (Rep. Exp. Farms, 1887, p. 14), a red and black chrysomelid beetle was found at Regina and other places in the Northwest Territories, eating the leaves of turnips. It is now known to be an occasional pest upon turnips, cabbages and almost all crucifers from Manitoba to British Columbia, but is rare towards the eastern and western limits of its range. A full account of the life history is given in the Report of the Experimental Farms for 1892, page 152.

The Spinach Carrion Beetle (*Silpha bituberosa*, Lec.).—In the 1893 Report of the Experimental Farms, page 174, mention was made of injuries to certain garden crops at Calgary by the larvæ of this

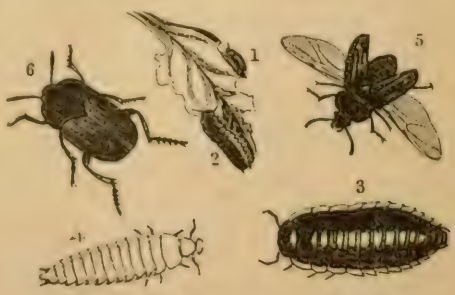

Fig. 6.—The Beet Carrion Beetle.

beetle, and since then occasional complaints of their attacks upon plants belonging to the Spinach and Gourd Families have been received. A European species, *Silpha opaca*, L., has similar bad habits and is known as the Beet Carrion Beetle. This has been treated of several times by Miss E. A. Ormerod, the eminent English economic entomologist. As a remedy against these insects, plants may be protected by spraying or dusting them with poisonous insecticides, those containing arsenic being the most useful.

The Carrot Rust-fly (*Psila rosæ*, Fab.).—An insect enemy very seldom mentioned in the writings of entomologists, but one which is frequently complained of by correspondents in New Brunswick and some parts of the provinces of Quebec and Ontario (in the East), is the Carrot Rust-fly of Europe. In 1885 infested carrots were found at Ottawa, Ont. (Rep. Hon. Ent. Dep. Agr. Can., 1885), and since then this insect has at different times caused rather serious losses in some other parts of the Eastern provinces. The red carrots are much more attacked than the white ones, but no kinds are always exempt. Surface treatment with carbolized or other malodorous substances, have given good results in preventing the flies from laying their eggs. Late sowing has also been found very useful. As the larvæ work also in stored carrots during the winter, the soil in which the latter have been packed should be carefully treated to destroy the pupæ of those larvæ which leave the roots and enter the soil to complete their development.

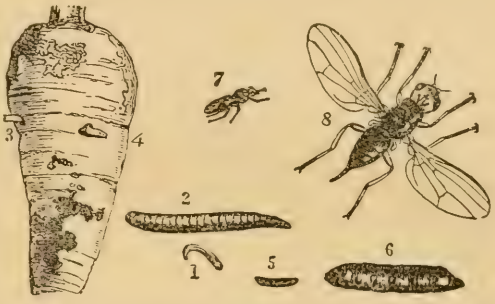

Fig. 7.—The Carrot Rust-fly—natural size (1, 5, 7), and enlarged (2, 6, 8).

The Tomato Stalk-borer (*Hydrœcia cataphracta*, Grt.).—For many years all lepidopterous borers in the stems of tomatoes and potatoes in Canada have been considered to be *Hydrœcia nitela*, Gn., but upon breeding during several years a great many examples from larvæ found boring in these plants in Central Canada I have never succeeded in obtaining any other species than *H. cataphracta*. I am, therefore, led to believe that this is the insect which has been referred to previously as "the Stalk-borer." Not only does the larva attack the tomato and potato, but it bores into the stems of almost every other plant while in a succulent condition if they are thick enough. Unfortunately no remedy is possible other than the cutting out of the larva when its presence is detected by the fading of the leaves.

The Black Army-worm (*Noctua fennica*, Tausch.).—Since 1884 (Rep. Ent. Soc. Ont., pp. 13 and 15), when the first outbreak of this caterpillar occurred in such numbers as to gain for it the name of the Black Army-worm, a certain amount of damage must be attributed every year to this species. In years of small occurrence the caterpillars are confined mostly to clover fields and do not attract attention, but when abundant they spread from the clover and attack almost every kind of succulent plant or shrub. When full-grown the larvæ are large, velvety black caterpillars, striped with white, two inches in length and very ravenous; as they develop early in the season, their depredations among young vegetables are sometimes serious before they are noticed. The best means of checking this and all kinds of cutworms is to use what is known as the "poisoned bran remedy," of which,—as it is so remarkably successful and the subject of a satisfactory remedy against cutworms is of such general interest,—it may be well to give here a full description of the preparation. It consists of a mixture of bran and Paris green in the proportion of 50 of the former and 1 of the latter. In making this mixture (which may be applied either wet or dry), it is best to dampen the bran slightly with water containing a little sugar. After mixing thoroughly, so that the whole mass may be permeated very slightly with moisture, add the Paris green by shaking on a very little at a time and stirring it in. If the Paris green were added to the bran when it is perfectly dry, it would, owing to its weight, sink at once to the bottom when stirred. If it is desired to use this mixture as a wet application, more sugar and water must be added until it is of about the same consistency as porridge; but, if it is to be used dry, a little more dry bran may be added until the mixture will run through the fingers easily.

The Red-backed Cutworm (*Carneades ochrogaster*, Gn.).—Many different kinds of cutworms have at various times been described by writers in agricultural and entomological papers, but the one which I am convinced is the worst culprit of all has been generally overlooked. This is the large dull-brown caterpillar above named, which may be easily recognized by its large size, and the broad reddish stripe down the back. The moth, which lays the eggs from which these caterpillars hatch, varies much in colour, from bright brick red in the form named *turris* to a grayish ochre-yellow in the typical form. The caterpillars are particularly troublesome in gardens, attacking all early vegetables and annual flowering plants. The remedy for the last species is of course applicable to this, and, as the caterpillars are specially destructive to newly set out cabbages, tomatoes, etc., it is well to protect these by

wrapping loosely round their stems a strip of paper about two inches wide by three long, placing it so that about an inch and a half of the band is above the ground. Strips of tin answer the same purpose, the heavy-bodied caterpillars not being able to crawl up the smooth surface.

The Clover Cutworm (*Mamestra trifolii*, Rott.).—Although named after the clover plant, upon which certainly this insect does feed, the caterpillars attack very many other crop plants and many weeds. Perhaps the worst injuries which have been reported in Canada, were upon field peas, mangels, cabbages and turnips (Rep. Exp. Farms, 1888, p. 57). Spinach and the "Lamb's Quarters" (*Chenopodium album*) are common food plants of green caterpillars much less marked with dark lines than those which are usually found on peas, mangels and turnips; but, for the meantime, all are included in the species *M. trifolii*. The last serious outbreak of the Clover Cutworm was in 1896 upon turnips and peas in the townships around Rice Lake, Ont.

The Corn Worm (*Heliothis armiger*, Hbn.).—This insect, which is common in the United States and is so well known in the South as the notorious Boll Worm of the cotton fields, is by no means a frequent crop pest in Canada, but is probably the cause of some loss in fields of late corn every year, and occasionally, as last autumn (Rep. Ent. Soc. Ont., 1898, p. 82), becomes a pest of some importance, no less than 95 per cent of the ears of both sweet corn and yellow field corn having been injured near Orillia, Ont., by the caterpillars eating into and much disfiguring the soft grains beneath the inclosing husks.

The Spotted Blister-beetle (*Epicauta maculata*, Say).—The injuries to potatoes by the Gray and the Black Blister-beetles are sometimes considerable in the old provinces of Canada, but they are intermittent in occurrence. In the West another species, the Spotted Blister-beetle, of about the same size but spotted all over with minute black points, frequently appears suddenly in large numbers. As the Colorado Potato Beetle does not occur as a pest of the potato west of Manitoba, no regular treatment of potato fields with poisonous applications is practised and consequently much damage is sometimes wrought before anything can be done to prevent it. In the larval state the blister-beetles are parasitic upon the eggs of locusts, but in the perfect form they are ravenous vegetable-feeders. When these insects occur, the crops attacked should at once be freely dusted or sprayed with Paris green or a solution of whale-oil soap.

The Western Blister-beetle (*Cantharis Nuttallii*, Say).—Another of the blister-beetles and one of the handsomest creatures we have in our insect fauna is the Western Blister-beetle, a species an inch in length,

with its plum-coloured wing-cases, glossed with gold, head, thorax and body metallic green with the same golden sheen as the wing-cases, the antennæ dull black and the legs dark purple. Although so beautiful to look at, the beetles are extremely destructive when, as is frequently the case in the West, they appear suddenly in fields of beans and vetches; moreover, they omit an abominable odour, and, if crushed, the juices of the body have such a vesicating power that they will readily blister the skin which may come in contact with them. In a state of nature these beetles feed upon the *Astragali*, or Milk-vetches, and other Leguminosæ growing wild on the western prairies. The species is credited with being one of the most inveterate enemies of the Rocky Mountain Locust, vast numbers of the eggs of which are destroyed by its larvæ. (Rep. Exp. Farms, 1892, p. 155.)

Fodder Crops.

The Cottony Grass Scale (*Eriopeltis festucæ*, Fonsc.).—In the Report of the Experimental Farms for 1895 (p. 145), is an account with an illustration of a curious scale-insect which has occasionally done harm to pastures and meadows in Nova Scotia. It was first sent in by Prof. A. H. Mackay, who stated that it occurred in large numbers over an extensive marshy flat in Cumberland County, N.S., every blade of dead grass having one or more egg-sacs attached. The young insects hatch in spring, and feed on the leaves and stems of grasses, the females becoming full-grown in July and soon after the middle of the month laying their eggs in conspicuous elongated oval sacs of closely-felted, white, downy threads. As the eggs do not hatch until the following spring after they are laid, burning over the "old fog" or dead grass either late in the autumn or

Fig. 8.—The Cottony Grass Scale: egg-sacs on grass—natural size.

before growth begins in spring is an easy means of preventing the increase of this insect.

The Punctured Clover Weevil (*Phytonomus punctatus*, Fab.).—The first record of the occurrence of this clover weevil in Canada was in 1884 (Rep. Hon. Ent. Dept. Agr. Can., 1884). It is not, however, a pest which regularly occurs, and in almost every instance when there has been an outbreak it has been attended by a parasitic fungous disease (*Entomophthora phytonomi*, Arthur), which has so reduced it that in no case have reports been received of its reappearance the following year.

In Canada a much more frequent enemy of the clover plant and one which sometimes makes serious but unnoticed diminution in the weight of crops of that important fodder is the native Green Clover Weevil (*P. nigrirostris*, Fab.), a much smaller insect, the larvæ of which eat the young flower heads and budding shoots inside the sheathing stipules of the leaves. With both of these weevils, early cutting of the first crop of clover hay, or feeding it off with stock, as is done for the clover-seed midge, are useful.

The Clover Root-borer (*Hylesinus trifolii*, Müller) is only once recorded as having attracted notice by its injuries in Canada (Rep. Exp. Farms, 1891, p. 200). The remedy most relied on is the ploughing down deeply of an infested crop, and refraining from sowing clover again for some time.

Fig. 9.—Clover Root-borer.

FRUITS.

Owing to the fact that a large amount of capital has been invested in fruit farms and that these plantations are of a more permanent nature than those of any of the ordinary crops which occupy the land for only one or two years or less, more attention has been devoted to the enemies of fruit crops than to other injurious insects. The consequence is that the habits of most of those which trouble the fruit grower are now pretty well understood, and practical standard remedies have been discovered for most of them. One of the most important developments of economic entomology during the past decade has been the introduction into horticulture of what is known distinctively as "spraying,"—an effective method of distributing arsenical and other poisonous sprays over growing crops by means of specially prepared

force-pumps and nozzles, which will allow of the use of a minimum quantity of a suitable insecticide, so that no injury may be done by it to the foliage treated, while at the same time the marauding insects are destroyed.

The San José Scale (*Aspidiotus perniciosus*, Comstk.).—Probably no insect which has claimed the attention of entomologists has caused more excitement or proved more difficult to control than this minute scale-insect, which was given its popular name by fruit shippers in 1873, from the place in California where it was first noticed. It was not till 1880 that Prof. Comstock pointed out the great loss which it was causing and gave it the specific name of *perniciosus* on account of the extent of its injuries. Up to 1892 the San José Scale was thought to be confined in North America to the Pacific Coast, but during the summer of 1893 it appeared in injurious numbers in the Eastern States, and in 1894 the first Canadian specimens were received from near Kelowna, on Lake Okanagan, British Columbia. (*Farmer's Advocate*, London, Ont., Dec., 1894). The infested trees were destroyed, and it was not until 1896 that the insect was again found injuring fruit trees, this time in two localities on Vancouver Island. By the destruction of the trees this importation was again entirely wiped out, and no further appearance of the San José Scale in British Columbia has so far occurred. The history of the San José Scale as an injurious fruit pest in Canada begins with the spring of 1897, when in the month of January, undoubted specimens were found at Chatham, Kent Co., Ontario, and soon afterwards near Niagara, in Lincoln County. Since that time its injuries and the efforts which have been made by the Federal and Provincial Governments have been a subject of absorbing interest and will, I fear, continue to be so for some time to come. As yet, no practical remedy suitable for general application by the ordinary fruit grower has been discovered, although fumigation with hydrocyanic acid gas, a dangerous operation with most poisonous materials, has proved effective in the hands of specialists when performed with great care. The best simple remedy is the spraying of the infested trees after close

Fig. 10.—The San José Scale: apple branch with scales; large scales above at left.

pruning with a strong solution (2 lbs. in 1 gallon of water) of "whale-oil" soap, a concentrated fish oil soap emulsified with caustic potash.

During the San José Scale investigations it became known that three other dangerous scales were present and wide-spread upon Canadian fruit trees, viz., two native species, the Forbes Scale (*Aspidiotus Forbesi*, Jnsn.) and the Putnam Scale (*A. ancylus*, Ptnm.), and besides these a European scale known as *Aspidiotus ostreæformis*, Curtis, the last named first found in America near Chilliwack in British Columbia, but now known to occur in many parts of Western Ontario, as well as in many of the Eastern United States.

New York Plum Scale (*Lecanium cerasifex*, Fitch).—The first appearance of this scale as a noxious insect in Canada was in 1894. (Rep. Exp. Farms, 1895, p. 157.) This is not nearly so difficult to treat successfully as the last species. Spraying the trees during the winter with the well known kerosene emulsion (Riley-Hubbard formula) diluted with four parts of water has been found to be the most satisfactory treatment.

The Cigar Case-bearer (*Coleophora fletcherella*, Fernald).—This destructive orchard pest which occasionally increases rapidly, and the caterpillar of which does so much harm to apple trees early in the season, was abundant in many parts of Canada in 1891. (Rep. Exp. Farms, 1891, p. 196.) The young caterpillars hibernate on the twigs in their small curved cases, and as soon as the warm weather begins they revive and attack the buds and unfolding leaves. Soon after, they form new and larger cases, shaped like miniature cigars, one quarter of an inch in length, inside which they live, moving about and feeding for some time on the leaves, through the surface of which they eat a small hole and then consume the parenchymatous tissues only, by extending the body for some distance around this hole between the epidermal layers of the upper and lower surfaces. In these cases also they complete their transformations, and the minute silky-gray moths emerge through the upper end of the cases at the end of July. Persistent spraying of the trees with Bordeaux mixture containing Paris green, or with kerosene emulsion early in the season, are necessary to control this pest.

The Apple Fruit-miner (*Argyresthia conjugella*, Zell.).—During 1896 (Rep. Exp. Farms, p. 258) a new pest of the apple appeared in alarming numbers in the Fraser valley and in Vancouver Island in British Columbia. The infested fruit was much gnarled and rendered unfit for the market by the work of the small caterpillars of a very small tineid moth not previously noticed in North America, but which in Europe was known to breed in the fruit of mountain ash (*Sorbus*

Aucuparia, L.). In British Columbia, in addition to cultivated apples, it was found that the larvæ also fed inside the fruit of the wild crab apple (*Pirus rivularis*, Dougl.), which has fruit of about the same size as the European mountain ash.

The Lesser Apple-worm [*Grapholitha* (*Semasia*) *prunivora*, Walsh].—For many years British Columbian apple growers have referred to a small caterpillar which in everything but size answered to the caterpillar of the Codling Moth, but it was not until 1898 when the perfect moths were reared, that the exact identity of the species was determined. In 1897 the caterpillars were very numerous and destructive in British Columbia, and also occurred in several places in Eastern Canada. (Rep. Exp. Farms, 1898, p. 199.) In the East as the caterpillars attacked the apple chiefly at the calyx end and did not burrow deeply into the flesh, the injury was less important than on the Pacific Coast, where they burrowed all through the fruit in a very similar way to those of the well known Codling Moth. The species was treated of by Benjamin Walsh many years ago in his first report as Entomologist of Illinois (1868), under the name of the Plum Moth. He bred specimens from plums, the fungous growth known as "the Black Knot," the Cock's-comb Gall of the elm, which is caused and inhabited by plant-lice, and also from a hollow gall on the leaves of red oak. Dr. C. V. Riley also bred it from galls on oak, from haws, from crab apples, and abundantly from cultivated apples.

The Mottled Umber Moth (*Hibernia defoliaria*, L.).—This moth, the caterpillar of which is one of the *Geometridæ*, is a European species which has secured a foothold in British Columbia, and every year does some harm to plum and cherry trees in Vancouver Island. In the Report of the Experimental Farms for 1893, page 178, it is treated of and figured in all its stages.

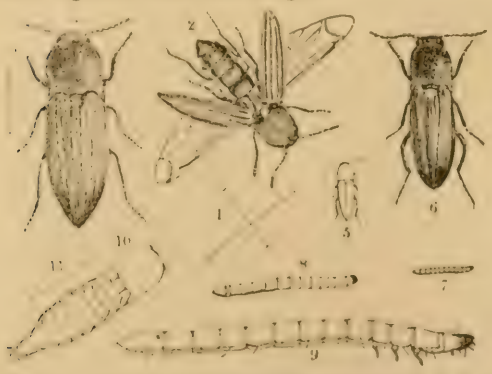

Fig. 11.—Click-beetles and Wireworms—2, 3, 6, 9, 11, magnified.

Click-beetles (*Corybites caricinus*, Germ., and *C. tarsatus*, Lec).—Injuries to the flowers of apple trees by the two click-beetles above named have sometimes been rather serious. (Rep. Exp. Farms, 1892, p. 146.) The grubs of these beetles belong to the large class of very injurious crop pests known as Wireworms, which attack the roots of many plants, and are among the most

troublesome insects the practical entomologist has to deal with; all efforts to control them with poisonous substances and most agricultural methods adopted with the same purpose have failed. Late ploughing of infested land and sowing fields with rye or barley are the only experiments which have given any degree of success.

The Bronze Apple Weevil (*Magdalis œnescens*, Lec.).—Considerable damage in Vancouver Island orchards is every year attributable to the attacks of this beetle. The fully developed beetle is deep bronze-black, narrow in shape and about a quarter of an inch in length. The female lays her eggs in minute holes which she bores with her slender elongated snout into the bark of apple trees. There are as a rule several of these holes in a group. As soon as the grubs hatch, they eat burrows through the tender bark and in the surface of the wood. Sometimes they occur in large numbers and the attacked trees soon die. Apparently healthy young trees are frequently attacked. Although the grubs have not yet been detected as enemies of the cherry, the perfect beetles swarm on the foliage of that tree and devour it to a serious extent. The regular treatment of orchards with alkaline washes to prevent the attacks of borers, and regular spraying of foliage for leaf-feeding insects, will control this enemy.

The Peach Bark-borer (*Phlœotribus liminaris*, Harris).—One of the most serious enemies of the peach grower in the Niagara Peninsula, although frequently overlooked, is this minute scolytid, which, although only one-twelfth of an inch in length, by reason of its attacks and those of its larvæ, causes such an enormously disproportionate outflow of gum from the trees that they are soon weakened and killed. As soon as this pest is noticed in an orchard, the trees should be washed as early as possible in the spring and again subsequently with a combined alkaline and carbolic acid wash. (Rep. Exp. Farms, 1893, p. 176, and 1894, p. 212.) Of somewhat similar habits to the Peach Bark-borer is the Fruit Bark-beetle (*Scolytus rugulosus*, Ratz.), which although for some years a destructive enemy of the fruit grower in the United States close to our borders, only appeared in our Canadian orchards in 1898. (*Farmer's Advocate*, 1898, p. 262.) As a general thing this insect confines its depredations to unhealthy trees; its injuries, therefore, are not of so much importance as those of the Peach Bark-borer. In the case of both, however, all moribund trees should be cut down and promptly burned.

The Gray Peach Weevil (*Anametis grisea*, Lec.).—An unusual but sometimes serious attack upon peach and apple trees is by the Gray Peach Weevil, a beetle belonging to the *Otiorhynchidæ*, which crawls up

the trees in early spring and eats out the young buds, showing apparently a preference for those of newly set scions. (Rep. Exp. Farms, 1893, p. 177.) As these beetles have not true wings, they can only gain access to the buds by crawling up the trees; therefore, banding the trees in spring with some material which cannot be crossed over by the beetles will prevent them from attacking the buds.

The Black Grape-vine Weevil (*Otiorhynchus sulcatus*, Fab.).—This is supposed to be a European insect which has been introduced into Canada. It is common in Nova Scotia, but no injury to crops has been reported from that province. In British Columbia (Rep. Exp. Farms, 1893, p. 182) it has caused injury as a greenhouse pest, the grubs eating the roots of gloxinias and cyclamens as well as the foliage of various other plants.

The Strawberry Bud-weevil (*Anthonomus signatus*, Say).—An intermittently occurring but serious enemy of the strawberry is the small beetle above named, which sometimes (Rep. Exp. Farms, 1887, p. 32, under the name *A. musculus*, Say) does much harm by laying its eggs in the buds of strawberries and then cutting them off. The remedy first suggested in the above article, of covering plants with paper or gauze until the flowers open, is the only one which has given up to the present time any useful results.

Fig. 12.—The Strawberry Bud-weevil—enlarged.

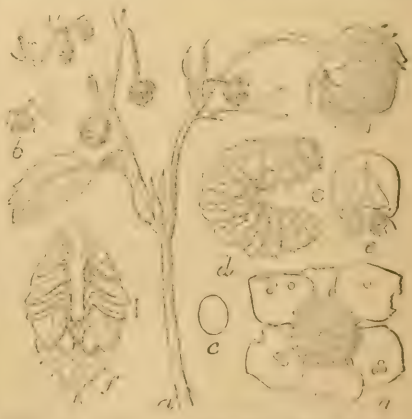

Fig. 13.—The Strawberry Bud-weevil; *a*, strawberry stem attacked; *c*, egg; *d*, larva; *f*, pupa—*c*, *d*, *f*, enlarged.

The Currant Weevil (*A. rubidus*, Lec.), another small beetle of the same family as the above, is an occasional enemy of white and red currants, the larvæ feeding in the fruit, causing it to ripen prematurely and fall from the bushes. This insect has never occurred in sufficient numbers to cause any noticeable diminution of the crop. (Rep. Hon. Ent. Dept. Agr. Can., 1885, p. 27; Rep. Exp. Farms, 1887, p. 31.)

The Black Gooseberry Borer (*Xylocrius Agassizii*, Lec.).—A mere mention may be made of rather extensive injuries to the stems of some young gooseberry bushes imported into British Columbia from Oregon, by the larvæ of a very rare longicorn beetle, to which the above name has

been given. (Rep. Exp. Farms, 1898, p. 207.) Although the larvæ were abundant in the consignment of bushes in which it was imported, this is still an extremely rare insect; therefore, as it has not been observed attacking gooseberry bushes in its native State, where they are extensively grown, its apparent abundant presence in the above instance must be considered as accidental, and, further, as all the infested bushes were destroyed, it is hardly likely that it will ever become an important enemy of the fruit grower in British Columbia.

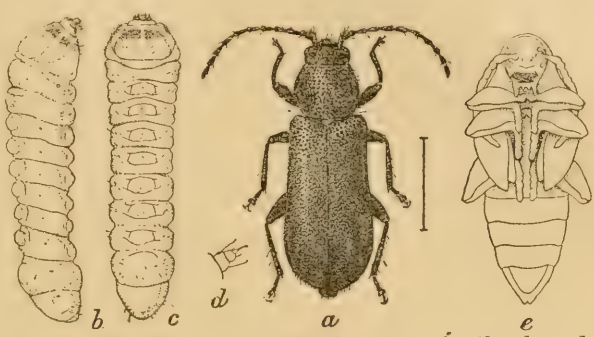

Fig. 14.—The Black Gooseberry Borer; *a*, beetle; *b*, *e*, *d*, larvæ; *e*, pupa—enlarged.

The Western Strawberry Crown-borer (*Tyloderma foveolatum*, Say).—Injuries by a crown-borer which attacks strawberries in British Columbia in a perfectly similar way to the eastern species *Tyloderma fragariæ*, Riley, have proved to be by the above named species. (Rep. Exp. Farms, 1897, p. 204.)

The Apple Maggot (*Trypeta pomonella*, Walsh).—A most destructive enemy of the apple fruit is the Apple Maggot, which has appeared in Canada in one or two places only (Rep. Exp. Farms, 1896, p. 256), although for many years it has caused great loss to fruit growers in the States of Vermont and Maine, and also in New York, Massachusetts and Connecticut. The life history is well known, having been worked out very completely by Prof. Harvey, of the Maine State Agricultural College. The remedy is comparatively simple but requires great persistence. The one that is most relied on by those who have had most experience, is the prompt destruction of windfalls, so as to prevent the maggots going into the ground when they leave the fruit to complete their transformations. This can be done by keeping pigs, sheep or other stock in the orchard. Prof. Harvey says emphatically "the gathering of windfalls for the checking of Trypeta has been tried and found effectual." Deep spading or ploughing of the ground under the trees and the keeping of poultry in the orchards are very useful, because when the larvæ leave the apples to pupate they always remain near the surface of the ground.

The Currant Maggot (*Epochra Canadensis*, Loew.).—The injuries by the Currant Maggot in many places on Vancouver Island are so

serious every year as to have deterred many from growing black currants. Although specifically named after Canada, this fly must be regarded as rare and extremely local in the Dominion. With the exception of parts of British Columbia, it is certainly nowhere common in Canada, although like the Apple Maggot it is abundant in some seasons in the State of Maine, close to our borders. (Rep. Exp. Farms, 1897, p. 204.)

The Plum Web-worm (*Lyda rufipes*, Marlatt).—When travelling through the Mennonite country in Southern Manitoba in the summer of 1896, I observed much damage was being done to plum trees by the gregarious false caterpillars of a sawfly, which webbed together the leaves of whole branches, and soon stripped them of all green cellular portions, in a very similar manner to the larvæ of the Cherry-tree Tortrix (*Cacœcia cerasivorana*, Fitch). This sawfly has also been found in South Dakota and has been treated of by Prof. Williams. (Bull. 38, S. Dak. Exp. Stn.) No specimens of the perfect insect have come into my hands, and it is just possible that it may be the European *Lyda piri*, of Schrank, which could easily have been imported in the cocoons among the roots of the plum trees brought out by the Mennonites from Southern Russia.

The Pear-tree Flea-louse (*Psylla piricola*, Förster).—This insect has only in one or two instances caused much loss in Canada, the first record being in 1894. (Rep. Exp. Farms, p. 210.) It may, however, be found in small numbers in almost all pear orchards in Western Ontario, and its injuries are often probably unnoticed even when they are of considerable extent. The presence of this flea-louse may generally be detected by the copious secretion of honey dew with which the leaves, limbs and trunks of the trees soon become covered and upon which a dirty looking black fungus, *Fumago salicina*, developes. The mature insects are like minute *Cicadæ* and belong to the same section of the Homoptera as the aphides or plant-lice. The Pear-tree Flea-louse passes the winter in the perfect state, chiefly beneath the flakes of bark on the trunks of the trees, beginning to move about and mate early in the spring. At that time they are not very active, and, when it is known that trees are infested, much good may be done by placing sheets on the ground beneath these trees and scraping off with hoes all the rough scales of bark. This debris should then be burnt at once, and the trees sprayed with kerosene emulsion.

The Black Peach Aphis (*Aphis persicæ-niger*, E. F. Smith).—The first record of this very fatal enemy of the peach tree was at Leamington, Essex Co., Ontario. (Rep. Exp. Farms, 1895, p. 196.) But it is hardly to be doubted that it might have been found in Canadian peach

orchards previous to that date. Like all the dark-coloured plant-lice, it is harder to kill than those which are of a green colour. The form of the Black Peach Aphis which lives above ground, may be successfully and easily treated by spraying with a whale-oil soap solution (1 lb. in 6 gallons of water), but the destructive form which lives upon the roots is much more difficult to reach. A horticultural method which has given good results is a liberal periodic application of kainit, as much as 10 pounds being broadcasted on the ground as far as the branches extend, beneath trees of about six inches in diameter, and then lightly spudded or cultivated in. This not only invigorates the trees but also destroys the insects.

The Clover Mite (*Bryobia pratensis*, Garman).—There are doubtless many mites which are classed under the general name of "Red Spider" and which do much harm to many crops. Among these, certainly in British Columbia and Ontario, and probably in every other province of Canada, is the species which has been called the Clover Mite on account of its particular liking for that plant. The conspicuous ruby-red eggs seem to be laid by preference upon plum and apple trees, and are sometimes so numerous as to give a distinct ruddy tinge to the twigs in winter. Nevertheless, strangely, the abundance of eggs is not necessarily, it would seem, followed by noticeable injury to the trees on which the eggs are found. In California and in British Columbia some injury has been complained of from time to time and the usual remedy for Red Spiders—spraying with kerosene emulsion containing some flowers of sulphur in suspension—has been found quite satisfactory.

Besides the above pests of the farm and the fruit garden, the following may be briefly mentioned here as late additions to the list of Canadian noxious insects, which have been the cause of considerable loss.

FOREST AND SHADE TREES.

The Birch Bucculatrix (*Bucculatrix Canadensisella*, Chamb.), is an enemy of unusual occurrence, which was very abundant in Eastern North America in 1892. (Rep. Exp. Farms, 1892, p. 56.)

Fig. 15.—The Birch Bucculatrix—enlarged.

The Vancouver Island Oak Looper (*Ellopia somniara*, Hulst).—The caterpillars of this moth are measuring worms, and at intervals of about four or five years appear in incredible numbers and entirely defoliate the oak trees over miles of country around Victoria, Vancouver Island. (Rep. Exp. Farms, 1890, p. 175.)

The Spruce Gall-louse (*Chermes abietis*, L.).—Much anxiety has been caused during the last year or two since the value of spruce timber has been enhanced by its extensive use in the manufacture of paper, by the injuries and spread of this insect. (Ont. Forestry Rep., 1897, p. 39.)

The Spruce Bark-borer (*Dendroctonus rufipennis*, Kirby).—As soon as the spruce forests of eastern Canada are cut into, this bark-beetle appears and does much damage by attacking the bark of the trees standing nearest the openings. The same species occurs in Northwestern Canada and injures spruce timber in the same way as it does in New Brunswick and Quebec. (Rep. Exp. Farms, 1887, p. 35.)

The Larch Sawfly (*Nematus Erichsonii*, Hartig).—In 1883, this sawfly, a European species which had been observed in small numbers in the Eastern Townships of Quebec during the previous year (Rep. Ent. Soc. Ont., 1883, p. 17), attracted general attention by its abundance and the rapidity with which it was spreading through the country. It has since that time destroyed millions of feet of valuable larch timber and has now spread to the shores of Hudson Bay and through Labrador. Fortunately in many places where it was formerly abundant it has now almost entirely disappeared.

The Spruce Sawfly (*Lophyrus abietis*, Harr.).—Through Northwestern Ontario and Manitoba the spruce trees are frequently stripped of their leaves by the larvæ of the Spruce Sawfly. Where, as is fre-

quently the case in the West, these trees have been grown for ornamental purposes, the disfigurement is of considerable importance. The injury to the timber is also great, and many trees after being defoliated for two or three years running are destroyed.

The Negundo Plant-louse (*Chaitophorus negundinis*, Thomas).—One of the worst pests of shade trees in Manitoba and the Northwest Territories, is this native plant-louse, which renders the trees, and everything around them, filthy, by reason of the copious deposits of honey dew which it emits. Trees have been cleared of this pest by spraying them with the ordinary washes of kerosene emulsion and whale-oil soap which are used against other plant-lice. (Rep. Exp. Farms, 1893, p. 184.)

The Maple Shield-maker (*Incurvaria acerifoliella*, Fitch).—Occasionally the leaves of the sugar maple, particularly when growing in forests or groves, are damaged by the caterpillars of a small moth, which cut out circular disks, over a quarter of an inch in diameter, and make curious little flat cases of them, inside which they live while they are devouring the foliage and inside which also they pass the winter among the fallen leaves. (Rep. Hon. Ent. Dept. Agr. Can., 1885, p. 31.)

The Striped Cottonwood Beetle (*Lina scripta*, Fab.).—Poplars and willows in the prairie provinces are frequently disfigured and much injured by the fetid larvæ of this beetle, which eat away the green portions of the foliage, leaving only the browned skeletons of the leaves.

The Pallid Aspen Beetle (*Gonioctena pallida*, L.).—Throughout Manitoba and the Northwest Territories during the past two years, the groves of aspen poplars, which are of so much importance in that country, have been devastated by the larvæ of this insect, which in every way closely resemble those of the last. Plantations have been protected by spraying them as soon as the beetles appear in spring, with a Paris green wash.

The Ten-striped June Beetle (*Polyphylla decemlineata*, Say).—The grubs of this handsome western beetle do much harm to the roots of many shrubs and young trees in nurseries, as well as to the roots of almost every plant grown in gardens on Vancouver Island. (Rep. Hon. Ent. Dept. Agric. Can., 1885, p. 15.) These larvæ are very similar in appearance to, but are larger than the well known white grubs of the east.

Flowering Plants.

The Violet Sawfly (*Emphytus Canadensis*, Kirby).—Sometimes the growers of those garden favourites, pansies and violets, find that their plants have been eaten during the night by some unknown enemy. By looking beneath the surface of the soil, or under the lowest leaves, they may find some bluish-black smooth false-caterpillars. These are the larvæ of the above named insect which often occurs upon members of the Violet Family in gardens, and on one occasion did much harm in the glass houses of a large florist in Toronto. (Rep. Exp. Farms, 1898, p. 169.)

The Black Violet Aphis (*Rhopalosiphum violæ*, Perg.).—Another insect pest which has caused much damage to violets during the past year or so is the Black Violet Aphis, which made its first appearance in Canada about 1897. Up to the present time this insect is not widespread, and, as it has been treated very successfully in the United States with hydrocyanic acid gas, a substance which although dangerous to apply can be used quite satisfactorily by careful people, there is no reason why it should be the cause of frequent losses. The ordinary method of destroying insects in greenhouses by fumigation with tobacco may also be used, or even dusting the plants with powdered tobacco.

The Greenhouse Leaf-tyer (*Phlyctænia ferrugalis*, Hbn.).—A late addition to the injurious insects of Canada which, like the last named, has so far only appeared in a single establishment, is this small moth, the caterpillars of which feed upon the leaves of roses in greenhouses. The damage done by the caterpillars of this insect were very serious about three years ago, necessitating the entire cleaning out of a large house of choice roses. The only reference in American literature to injuries by this insect up to the present, which I have been able to find, is in Bulletin No. 102 of the Michigan Agricultural Experiment Station, where under the head of "The Celery Borer," the species is treated of as an out-door pest, the larvæ of which had been found boring into the stems of celery. In the Canadian greenhouses referred to above, the caterpillars are stated to feed and the moths to appear throughout the winter.

Fuller's Rose Beetle (*Aramigus Fulleri*, Horn).—At long intervals florists suffer from this beetle which in Canada and the Eastern States only increases and becomes a serious enemy under glass. (Rep. Exp. Farms, 1889, p. 88.)

Fig. 16.—Fuller's Rose Beetle.

The Black Blister-beetle (*Epicauta Pennsylvanica*, De G.).—Garden flowers of various kinds, but particularly of China and German asters, as well as potatoes and leguminous plants and shrubs, are some-

times injured by this black Blister-beetle which like all the other *Cantharidæ,* has a habit of appearing suddenly in large numbers and attacking ravenously any plants they feed upon.

Live Stock.

The Cattle Horn-fly (*Hæmatobia serrata,* Rob.-Desv.).—One of the most remarkable importations of an injurious insect into America was that of the Cattle Horn-fly, which first appeared in Canada in July, 1892. (Exp. Farm Bull. 14, 1892.) Since then it has spread rapidly through the whole of Canada and has been the cause of enormous loss to dairy farmers. Fortunately through the abundance of its parasitic enemies, this pest has been reduced to almost the same limits as the ordinary Cattle Fly, *Stomoxys calcitrans,* L. The simplest remedy is the treatment of stock at the time they are liable to attack, with a mixture of one pound of pine tar in ten pounds of lard.

Stored Grain.

The Mediterranean Flour Moth (*Ephestia kuehniella,* Zell.).—This terrible pest of the miller is an importation from the south of Europe, which first came prominently before the public in Canada on account of its injuries, in 1889. (Rep. Exp. Farms, p. 73.) Owing to their habit

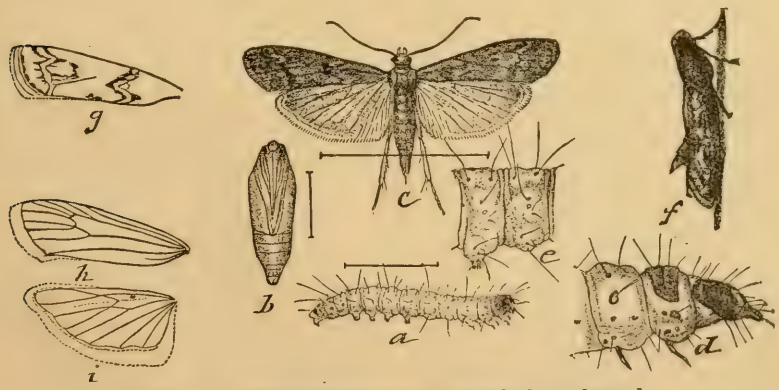

Fig. 17.—The Mediterranean Flour Moth—enlarged.

of attaching themselves by means of a silky web to any object upon which they rest, the caterpillars are easily and frequently carried from infested mills to other similar establishments, where they soon make their presence known by covering everything with silken webs, thus putting mil-

lers to great expense in cleaning their bolting reels, with which the flour is separated. Infested mills may be rendered free from their troublesome presence, only with great difficulty and at considerable expense. Fumigating with bisulphide of carbon is the method which has been most widely adopted. In Canada, throwing mills open to the intense cold of winter has also proved of great value in controlling this insect.

Household Pests.

The Carpet Beetle or "Buffalo Moth" (*Anthrenus scrophulariæ*, L.).—One of the most destructive and annoying enemies of the housekeeper is the Carpet Beetle, frequently miscalled the "Buffalo Moth."

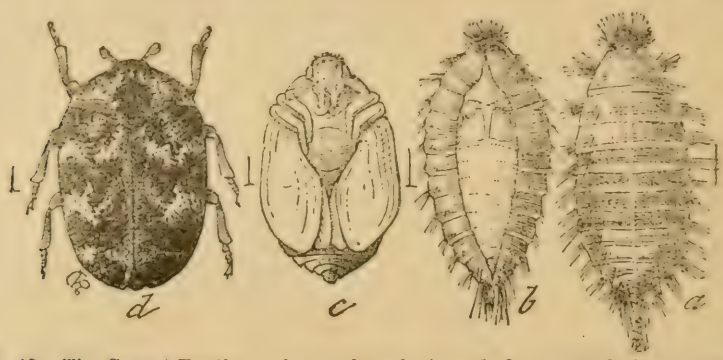

Fig. 18.—The Carpet Beetle; *a*, larva, dorsal view; *b*, do., ventral view; *c*, pupa; *d*, adult—all enlarged.

Although this insect has been well known to collectors of Canadian insects for many years it was not until 1895 that it was complained of in Canada as attacking household goods. The perfect beetles may be found on the blossoms of many shrubs, especially on the different kinds of Spiræas, in many parts of the Dominion, and although these beetles differ in no way from those found in Western Ontario it is only in the last named district that injury to carpets and other woollen fabrics has been reported. This is an extremely difficult insect to control. Spraying carpets with benzine or gasoline, ironing them with hot irons after previously wetting them, and constant sweeping out of rooms accompanied by a copious use, while the carpets are up, of scalding hot water which will penetrate between the cracks of the floors, are all that can be recommended in the way of remedies.

The Real Stink-bug (*Nomius pygmæus*, Dej.).—There are several malodorous insects known, to many of which the name of "stink-bug" has been applied. Instances of these are the various true bugs

(*Hemiptera*), the scavenger beetles (*Staphylinidæ*), the carrion beetles (*Silphidæ*), and ground beetles (*Carabidæ*), but I feel sure that no one who has been unfortunate enough to accidentally disturb or lay hold of a specimen of the small insect which is known to entomologists as *Nomius pygmæus* will ever dispute its right to be called for all time the REAL Stink-bug. Fortunately, in most places this is an extremely rare insect; but on two or three occasions it has appeared in small numbers about dwelling houses and has been an intolerable affliction to the inhabitants, who were actually driven away until the plague ceased. This formidable disturber of man's comfort is a small modest-looking brown beetle no longer than one-quarter of an inch, but, when crushed or excited, as by being caught in a spider's web, can and does give out a most far-reaching and repulsive fetor which is besides of a very lasting nature, articles which have been in contact with the beetles retaining the characteristic odour for several weeks. Most of the complaints of the unpleasant presence of this beetle have been sent to me from Vancouver Island, B.C.

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X.—*Notes on the Marine Mollusca of the Pacific Coast of Canada.*

(Additions and Corrections to the "Preliminary Catalogue" in the Transactions of the Royal Society of Canada, 2nd Series, Vol. I., Section IV., pp. 17-100.)

By the Rev. GEORGE W. TAYLOR, F.Z.S., F.R.S.C.

(Read May 26, 1899.)

The purpose of the present paper is to supplement the Preliminary Catalogue of our Western Mollusca, read before this society five years ago, and published in the Transactions for 1895 (2nd series, vol. i, Sec. IV, pp. 17-100).

A considerable number of species have been added to the British Columbian list since the date of that paper, mainly through the researches of Dr. C. F. Newcombe, of Victoria, and Mr. Walter Harvey, of Nanaimo.

Several difficult groups have been studied and new species therein described by Dr. Dall during the same period; and this noted conchologist has also most kindly examined many puzzling specimens submitted to him from my cabinet, comparing them with types in the United States National Museum, and thus enabling me to correct some errors in nomenclature into which I had fallen.

Additional information has been obtained as to the range and station of many of our species; some thought to be local prove to be of wide distribution, and others, apparently very rare, have been found in new localities in comparative abundance.

It has been my endeavour to incorporate these new facts, so far as possible, in the following notes.

In the Preliminary Catalogue the number of species recorded was three hundred and fifty-one. The species of *Nudibranchiata* were not included, as I had not given the group any attention.

In the present paper three species are dropped from the list, while seventy-one species are added, namely:

PELECYPODA	21
SCAPHOPODA	2
GASTEROPODA—	
Pteropoda	1
Opisthobranchiata	2
Nudibranchiata	17
Pulmonata	6
Ctenobranchiata	19
Polyplacophora	3—71,

bringing our total to 419.

As the Brachiopoda (though not mollusca) were treated in the former paper, they have been, for convenience, also considered in this, and are included in the foregoing calculations. If the four species of this group are eliminated, it will leave us a total of true mollusca of four hundred and fifteen species.

The principal papers, relating specially to British Columbian mollusca, that have appeared since the date of the Preliminary Catalogue are:

(1.) A paper by Dr. C. F. Newcombe, entitled "Some new or rare Species of Marine Mollusca recently found in British Columbia." It was published in the "Nautilus," vol. x, pp. 16-20 (June, 1896), and adds thirteen species to our list and gives interesting notes on several others.

(2.) An important paper by Dr. Dall, "Notice of some new or interesting Species of Shells from British Columbia and the adjacent region." This was published in "Bulletin No. 2 of the Natural History Society of British Columbia," pp. 1-18, plates i and ii (January, 1897). In it Dr. Dall describes and figures twenty-two new species, nearly all of them from our coasts.

There is also a list of British Columbia mollusca (prepared by Dr. Newcombe) in the lately-issued "Catalogue of the Collections of Natural History and Ethnology in the Provincial Museum, Victoria, British Columbia."

Besides the above many papers have been published in the Proceedings of the United States National Museum and of the Academy of Natural Sciences of Philadelphia, and in the "Nautilus," which deal incidentally with British Columbian species. Most of these papers are referred to, and their titles are given, in these notes.

NOTES.

1. Terebratulina unguicula, Carpenter.

Dall says (Proc. U. S. Nat. Mus., xvii, 719) that this form cannot be separated even as a variety from European specimens. Our species must therefore stand as *Terebratulina caput-serpentis*, Linne.

3. Laqueus Californicus, Koch.

Dr. Dall has determined that the Vancouver shells are not the true *L. Californicus* of Koch, but a distinct species, which is really the adult form of that named by him *Megerlia Jeffreysi*. Nos. 3 and 4 of my Preliminary Catalogue must therefore be united, and must stand as *Laqueus Jeffreysii*, Dall. (See Amer. Jour. of Conch., vol. vii, p. 65, pl. xi, figs. 7-10, March, 1871; and Proc. U. S. Nat. Mus., vol. xvii, p. 725, 1894.)

This species has been taken not rarely at low tide on Haddington Island (Harvey) and in deep water off Nanaimo.

13. PECTEN ALASKENSIS, Dall.

I have lately found fossil specimens of this species in the blue clay at Nanaimo.

13*a*. PECTEN RANDOLPHI, Dall.

Nautilus, vol. xi, p. 86, December, 1897.

Bering Sea to West Mexico, in deep water; U. S. Fish Commission.

16. Genus BRYOPHILA, Cpr.

Name preoccupied and changed by Carpenter himself to PHILOBRYA.

19. MODIOLA RECTA, Conrad.

Additional localities; Hornby Island, Denman Island, Comox and Union (Harvey); Nanaimo (G. W. T.).

24. MODIOLARIA TAYLORI, Dall.

This M. S. species has now been described and figured by Dr. Dall in Bull. Nat. Hist. Soc. of B. C., No. 2, p. 5, pl. i, figs. 17 and 18, January, 1897.

25*a*. MODIOLARIA VERNICOSA, MIDD.

Mal. Ross., pt. 3, p. 20, No. 3 (1849).

This species was taken in various Alaskan localities and off Masset, Q. C. I., by Dr. Dall, who has figured the shell in the bulletin above referred to, at pl. i, fig. 4.

Dr. Dall also describes and figures (*l. c.*, p. 5, pl. i, fig. 1) MODIOLARIA SEMINUDA from Alaska, and remarks that "further researches can hardly fail to add it to the British Columbian fauna."

26. CRENELLA DECUSSATA, Mont.

The true *C. decussata* has been found by Dr. Newcombe and Mr. Harvey at Alert Bay. The shells formerly recorded under this name by Whiteaves and others belong, as I pointed out in my former paper, to a different species. This has since been described as

26*a*. CRENELLA COLUMBIANA, Dall.

l. c., p. 4, pl. i, figs. 3 and 5.

This species was taken by Dr. Dall in Alaska and the Aleutian Islands. It is not uncommon with us in shallow water dredgings.

27. ANODONTA NUTTALIANA, Lea.

28. UNIO MARGARITIFERUS, Linn.

Both these shells are generally distributed in British Columbia, the former in lakes and the latter in streams near the coast. Specimens of both species are in the Provincial Museum, labelled Skeena River, a more northerly locality than any in which I have collected.

31. NUCULA BELLOTI, A. Adams.

Dr. Dall considers that the shells referred to in former papers as *N. tenuis*, Mont., and *N. lucida*, Gould., should be referred to *N. Belloti*, A. Adams.

31*a*. NUCULA CARLOTTENSIS, Dall.

l. c., p. 6, pl. i, figs. 15 and 16.

Off Queen Charlotte Islands, in 876 fathoms, U. S. Fish Commission steamer "Albatross."

32. LEDA FOSSA, Baird.

This shell is figured by Dall (*l. c.*, pl. ii, figs. 3 and 13), who points out that it was described from a young specimen, so that the original diagnosis is hardly sufficient. Dr. Newcombe has dredged this species at Victoria and Cumshewa Inlet.

33. LEDA ACUTA, Conv.

Common at Cumshewa, Skidegate and Dawson Harbour, Q. C. I. (Dr. Newcombe, "Nautilus," x, 19.)

34*a*. LEDA EXTENUATA, Dall.

l. c., p. 8, pl. ii, fig. 2.

34*b*. LEDA LEONINA, Dall.[1]

Nautilus, vol. x, no. 1, p. 2 (May, 1896).
Bull. Nat. Hist. Soc. B. C., p. 7, pl. ii, fig. 12.

34*c*. LEDA CELLULITA, Dall.[1]

Nautilus, x, no. 1, p. 1; Bull. N. H. S. B. C., p. 7, pl. ii, figs. 5 and 7.

34*d*. LEDA CONCEPTIONIS, Dall.

Nautilus, x, no. 1, p. 2; Bull. N. H. S. B. C., p. 7, pl. ii, fig. 1.

The first of these four species of Leda was obtained in very deep water (1,569 fathoms) off Dixon Entrance, British Columbia, by the U. S. Fish Commission. The second and third have occurred in the Straits of Fuca, and may therefore be included in our fauna; and the

[1] New species of Leda from the Pacific coast.

last, *L. conceptionis*, ranges, according to Dall, from Alaska to Santa Barbara, and has been taken in deep water off our coasts.

Genus YOLDIA.

Our species of *Yoldia* are dealt with in some detail by Dr. Dall in his paper last cited. He shows that our two commonest forms, which have stood since Carpenter's time as *Y. lanceolata*, J. Sby., and *Y. amygdalea*, Val., have both been incorrectly determined, and should be named respectively *Y. ensifera*, Dall (Bull. N. H. Soc. B. C., 2, p. 9, pl. ii, fig. 4), and *Y. arctica*, Gray. Dall also figures two new species, namely, *Y. Martyria*, Dall (*l. c.*, p. 9, pl. ii, fig. 15), Puget Sound, 35 to 135 fathoms, and *Y. Montereyensis* (*l. c.*, pl. ii, fig. 16), previously described by him in the "Nautilus"[1] (vol. vii, no. 3, p. 29, July, 1893). This species ranges from the Aleutian Islands to Monterey in 30 to 695 fathoms. It has been dredged in Puget Sound by the United States Fish Commission in 30 fathoms, and on the coast of British Columbia, off Vancouver Island, in 238 fathoms.

Our list will therefore stand as follows:

35. MEGAYOLDIA THRACIÆFORMIS, Storer (genus *Megayoldia*, Verrill and Bush).

35*a*. YOLDIA MONTEREYENSIS, Dall.

36. YOLDIA ENSIFERA, Dall.

37. YOLDIA SEMINUDA, Dall.

38. YOLDIA LIMATULA, Say.

39*a*. YOLDIA MARTYRIA, Dall.

40. YOLDIA ARCTICA, Gray.

Species 39 in my Preliminary Catalogue must be dropped from the list, the specimens having proved to belong to a variety of *Y. limatula*.

Genus MALLETIA, Desmoulins.

Four species of this genus, which has not hitherto been recorded from the northwest coast of America, were dredged by the United States Fish Commission steamer "Albatross" in deep water off the British Columbian and western United States coasts, and are described and figured by Dall in the "Bulletin of the Natural History Society of British Columbia," so often referred to. I think they may all with propriety be placed on the British Columbian list. They are as follows:

[1] "On a New Species of Yoldia from California."

40*a*. MALLETIA FABA, Dall.

l. c., p. 10, pl. ii, fig. 10.

Off Queen Charlotte Islands, 876 fathoms, also off the coast of Washington and San Diego, Cal.

40*b*. MALLETIA GIBBSII, Dall.

l. c., p. 10, pl. ii, fig. 14.

Off Queen Charlotte Islands, 876 fathoms.

40*c*. MALLETIA PACIFICA, Dall.

l. c., p. 11, pl. ii, fig. 11.

Off Straits of Fuca, 877 fathoms, also in Clarence Strait, Alaska, and in some Californian localities.

40*d*. MALLETIA (TINDARIA) KENNERLYI, Dall.

l. c., p. 11, pl. li, fig. 9.

Off the coast of Washington, 559 fathoms.

41. VENERICARDIA VENTRICOSA, Gould.

41*a*. VENERICARDIA BOREALIS, Conrad.

Since the date of my former paper I have seen many specimens of both these forms, and have no doubt that, as Dr. Stearns pointed out nearly ten years ago, the species are quite distinct.

V. ventricosa is the common form at Victoria, Nanaimo and Comox. *V. borealis* has been found at Alert Bay (Newcombe and Harvey) and at Skidegate Inlet, Q. C. I. (Newcombe).

43. MIODON PROLONGATUS, Cpr.

Alert Bay, 20 fathoms, very common (Harvey).

50. LEPTON RUDE, Whiteaves.

Usually found attached to the ventral segments of *Gebia Pugettensis*, but Mr. Harvey has shown me nine small specimens which were affixed to the under side of a "sea mouse" which he found in a dying condition on the sands at Comox.

54*a*. CRYPTODON BISECTUS, Dall.

Proc. U. S. Nat. Mus., vol. xiv, p. 189 (1891).

Dredged in Puget Sound. The shell is figured in Proc. U. S. Nat. Mus., vol. xvii, pl. xxvi, figs. 2 and 5 (1894).

57. DIPLODONTA ORBELLA, Gould.

Very common in sand between tides at the end of Comox Spit (Harvey); on outer beach of Newcastle Island, Nanaimo (G. W. T.).

60. SERRIPES GROENLANDICUS, Auct.

Common (fossil) in the blue clay at Victoria and Nanaimo. The young are plentiful (living) in 10 fathoms, sand, in Departure Bay.

68. TAPES TENERRIMA, Gld. and Cpr.

Schooner Bay, Gabriola Island, (G. W. T.)

81. MOERA SALMONEA, Cpr.

Common in sand at low water, Comox (Harvey).

83. ANGULUS VARIEGATUS, Cpr.

Dredged in 60 fathoms, sand, near Victoria (Newcombe).

84. ANGULUS GOULDII, Cpr.

I believe that the records of the occurrence in British Columbia of this species are erroneous, and the name should be erased from the list.

95. MACOMA INFLATULA, Dall.

l. c., p. 11, pl. i, figs. 19 and 20.

A manuscript name at the time of the Preliminary Catalogue, but the species has since been described and figured as above.

This is a common shell at Nanaimo (G. W. T.) and in the Queen Charlotte Islands (Newcombe). Most probably it is widely distributed in the province.

95*a*. MACOMA LIOTRICHA, Dall.

l. c., p. 12, pl. i, fig. 21.

Another new species described by Dall in his useful paper. It is said to range from the Arctic Ocean to the Queen Charlotte Islands.

113*a*. SOLENOMYA JOHNSONI, Dall.

Proc. U. S. Nat. Mus., vol. xiv, p. 189 (1891).

This species has been added to our list by Dr. Newcombe, who dredged a dead specimen in Barclay Sound in 1896. (See Catalogue of Natural History Collection in the British Columbia Provincial Museum, p. 89.) It had previously been found in deep water by the United States Fish Commission on the coast of Ecuador, in the Gulf of Panama and in the Gulf of California, and also as far north as the Straits of Fuca.

116. MYA ARENARIA, Linné.

Now the commonest clam in southern British Columbia. It occurs nearer high-water mark than the species of *Macoma*.

121. PENITELLA PENITA, Conrad.

122. PENITELLA OVOIDEA, Gould.

I have lately collected numbers of these shells, which occur together in shale on Newcastle Island, near Nanaimo. They are quite distinct, and may be easily separated, as pointed out by Carpenter and Whiteaves.

In *P. penita* the umbonal reflexion is closely adherent (Carpenter), and the siphonal tube has the epidermis wrinkled but not tuberculated (Whiteaves). In *P. ovoidea*, on the other hand, the umbonal reflexion is not adherent, but there is an anterior opening (Carpenter), and the siphonal tube has the epidermis strongly tuberculated (Whiteaves).

P. ovoidea is also much smaller and more slender in form than *P. penita*.

SCAPHOPODA.

128. DENTALIUM RECTIUS, Cpr.

A few living specimens of this rare shell were taken by a dredging party of the Natural History Society of British Columbia in 60 fathoms, sand, near Victoria in 1896. At the same time specimens of two species of *Cadulus* were taken. These were recorded in error, by Dr. Newcombe ("Nautilus," x, 18), as *Cadulus aberrans*, Whiteaves, a species that has not yet been found in any other than the original locality. Dr. Newcombe's shells, which proved to belong to new species, have been described by Dr. Dall as—

129*a*. CADULUS HEPBURNI, Dall.

l. c., p. 12, pl. i, fig. 13.

129*b*. CADULUS TOLMIEI, Dall.

l. c., p. 13, pl. i, fig. 8.

GASTEROPODA.

PTEROPODA.

In my former paper only one species of Pteropod is recorded, viz., *Cuvolina tridentata*, Forsk. A second species is added in Dr. Newcombe's list of the mollusca in the British Columbia Museum—

130*a*. CLEODORA OCCIDENTALIS, Dall.

The specimens were taken by Dr. Newcombe in 1897 to the north of the Queen Charlotte Islands.

OPISTHOBRANCHIATA.

134. TORNATINA HARPA, Dall.

Specimens referable to this species have been found in many British Columbian localities, Cumshewa Inlet, Skidegate and Dawson Harbour, Q. C. I. (Newcombe), Departure Bay and other localities near Nanaimo (G. W. T.).

I am suspicious, however, that this species will prove to be only the young form in good condition of the older *T. inculta* of Gould.

136. DIAPHANA PELLUCIDA, Brown.

This species appears to be widely distributed in British Columbia. I have dredged it in Departure Bay, and have found it between tides on Newcastle and Gabriola Islands. I have also received it through Mr. Harvey from Comox and Alert Bay.

137*a*. PHILINE POLARIS, Aurivillius.

One specimen of this species was in Mr. Harvey's collection, among specimens of *D. pellucida*, but without note of locality. It was taken either at Comox or Alert Bay, and adds a new species and genus to our list.

137*b*. DORIDIUM ADELLÆ, Dall.

Nautilus, vol. viii, no. 7, p. 73, November, 1894.

The type of this species was dredged in 30 fathoms in Eagle Harbour, Puget Sound. It has been found by Dr. Newcombe near Victoria, and I have dredged it commonly in 5 to 10 fathoms in Departure Bay, Nanaimo.

NUDIBRANCHIATA.

No attempt was made in my former communication to enumerate our species of this sub-class, as little study had been made of the group. Recently, however, Dr. Newcombe has been investigating some of our forms, and I take the liberty of inserting here the list, with notes, of seventeen species as published by him in the British Columbian Museum Catalogue before quoted.

"ÆOLIDIA PAPILLOSA, Linn., var. PACIFICA, Bergh.

Rare at low water, Victoria.

ÆOLIDIA PINNATA, Esch.

Dredged near Victoria; Sitka.

FLABELLINA IODINEA, Cooper.

Puget Sound and probably in British Columbian waters.

CRATENA CRASSICORNIS, Esch.

Esquimalt, rare; Sitka.

CRATENA SUBROSACEA, Esch.

Sitka and probably in northern British Columbia.

HERMISSENDA OPALESCENS, Cooper.

Dredged in clean sand near Victoria; also San Diego and Sitka.

FIONA MARINA, Forsk., var. PACIFICA, Bergh.

Found in the open Pacific, west of San Francisco, feeding on *Velellæ*. As large quantities of *Velellæ* drift on to our shores, their companion may be expected too.

DENDRONOTUS PURPUREUS, Bergh.

A large specimen dredged off Victoria.

TRITONIA TETRAQUETRA, Pallas.

Three very large specimens, one eleven inches long, collected by the Natural History Society of British Columbia in 1895, seem to belong to this species, which in the Kurile Islands used to be an article of food amongst the natives. It has been found by Dr. Dall in Alaska.

CHIORAERA LEONINA, Gould.

Very common in the autumn months near Victoria, especially amongst kelp-beds.

PLEUROPHYLLIDIA VANCOUVERENSIS, Bergh.

Vancouver Island.

PLEUROPHYLLIDIA CALIFORNICA, Cooper.

Specimens closely resembling this species occasionally taken near Victoria.

ADALARIA ALBOPAPILLOSA, Dall.

Sitka.

DORIS (ASTERONOTUS) SANGUINEA, Cooper.

Rather common at low water in spring.

ARCHIDORIS MONTEREYENSIS, Cooper.

Victoria; Monterey to Sitka (Bergh).

DORIS (DIAULULA) SANDIEGENSIS, Cooper.

Victoria, rather common amongst roots of eel-grass; San Diego, Puget Sound and Sitka (Bergh).

CHROMODORIS DALLI, Bergh.

Puget Sound (Bergh)."

(C. F. Newcombe, in Catalogue of Natural History Collections in the Provincial Museum, Victoria, pp. 91-92.)

PULMONATA.

Since the date of the former catalogue the study of the North American Pulmonata has made great strides, and in consequence there have been many changes made both in classification and nomenclature. I have thought it well, therefore, to rewrite our list of land snails, following the order and adopting the nomenclature used by Dr. Pilsbry in his new check-list of North American land shells,[1] adding in their proper places one species, *E. fidelis*, which was accidentally omitted in my last list, and five others which have lately been discovered within our limits.

156*a*. EPIPHRAGMOPHORA FIDELIS, Gray.

VALLONIA ALBULA, Sterki.

159. POLYGYRA DEVIA, Gld.

158. POLYGYRA COLUMBIANA, Lea.

POLYGYRA ARMIGERA, Ancey.

157. POLYGYRA TOWNSENDIANA, Lea.

160. POLYGYRA GERMANA, Gld.

161. PUPA CORPULENTA, Morse.

163. VERTIGO OVATA, Say.

164. COCHLICOPA LUBRICA, Müll.

[1] "A Classified Catalogue, with Localities, of the Land Shells of America north of Mexico; reprinted, with corrections, from the 'Nautilus,' August, 1897, to April, 1898."

138. Circinaria Vancouverensis, Lea.

139. Circinaria sportella, Gould.

Circinaria sportella, var. hybrida, Ancey.

142. Vitrina Pfeifferi, Newc.

144. Vitræa hammonis, Ström.

146. Vitræa Binneyana, Morse.

147. Conulus fulvus, Müll.

143. Zonitoides arboreus, Say.

145. Zonitoides milium, Morse.

148. Pristiloma Lansingi, Bld.

149. Pristiloma Stearnsii, Bld.

Pristiloma Taylori, Pilsbry.

140. Agriolimax agrestis, Linne.

141. Agriolimax campestris, Binney, var. hyperboreus, West.

151 and 152. Prophysaon Andersoni, Cooper.

150. Ariolimax Columbianus, Gould.

153. Pyramidula striatella, Anth.

154. Pyramidula asteriscus, Morse.

155. Punctum pygmæum, Drap.

156. Punctum conspectum, Bld.

Punctum Clappi, Pilsbry.

162. Sphyradium edentulum, Drap.

166. Succinea Nuttalliana, Lea.

165. Succinea Hawkinsii, Baird.

167. Succinea Oregonensis, Lea.

168. Succinea rusticana, Gould.

Dr. Newcombe, in the Museum Catalogue, includes eleven species of land shells, chiefly from Puget Sound localities, which I have omitted

from this list, as I have not seen any authentic record of their capture in British Columbia. They are:

Pupa Hoppii, Möller.
Vertigo Binneyana, Sterki.
Amalia Hewstoni, Cooper.
Arion hortensis, Fer.
Prophysaon foliatum, Gould.
Prophysaon ceruleum, Ckll.
Prophysaon fasciatum, Ckll.
Hemphilla glandulosa, Bld. & Binney.
Pyramidula solitaria, Say.
Pyramidula strigosa, Gould.
Punctum Randolphi, Dall.

CTENOBRANCHIATA.

Genus BELA.

A year ago I submitted a number of small gasteropods to Dr. Dall, who very kindly compared them with typical specimens in the collections of the United States National Museum. The determination, therefore, of the species of Bela, Mangilia and Odontostomia, in the present list, may be regarded as authoritative.

Of the nine species of *Bela* here noted I have specimens in my own collection of all but one, *B. Trevelyana*, which I retain on our list, on the authority, as before stated, of Mr. Whiteaves, who records, under this name, a single dead specimen, collected by Dr. Dawson in Virago Sound.

196. BELA FIDICULA, Gould.

Nanaimo, Victoria, Queen Charlotte Islands, etc.

197. BELA EXCURVATA, Cpr.

Nanaimo, not rare (G. W. T.); Alert Bay (Harvey).

197*a*. BELA SOLIDA, Dall.

Oak Bay, Victoria (G. W. T.).

198. BELA TREVELYANA, Turton.

Virago Sound (Dawson).

199. BELA EXARATA, Möller.

Victoria and Comox.

200. BELA CREBRICOSTATA, Cpr.

Victoria.

201. BELA TABULATA, Cpr.

Victoria (G. W. T.); Queen Charlotte Sound (Dawson).

202. Bela violacea, Mighels and Adams.

Comox and Alert Bay (Harvey.
Dr. Newcombe also reports it from Alert Bay as "not uncommon."

202*a*. Bela cylindracea, Möller.

Alert Bay (Harvey).

203. Mangilia sculpturata, Dall.

Fine typical specimens have been taken at Comox in 20 fathoms by Mr. Harvey. I suspect that some of the specimens from Victoria and Nanaimo, which have passed as *sculpturata*, should be referred rather to one of the two following species.

204. Mangilia angulata, Cpr.

Departure Bay (G. W. T.).

204*a*. Mangilia variegata, Cpr.

Sooke (Macoun); Alert Bay (Harvey).

206*a*. Cythara Victoriana, Dall.

Bull. Nat. Hist. Soc. of B. C., no. 2, p. 13, pl. i, fig. 9.

Dredged in Peddar Bay, near Victoria, in 10 to 20 fathoms, by Dr. Newcombe.

207. Cancellaria modesta, Cpr.

Victoria, 15 fathoms, a single dead specimen (Newcombe).

208. Cancellaria Unalashkensis, Dall.

Cumshewa Inlet and Dawson Harbour, 1895 (Newcombe).

210. Admete Conthouyi, Jay.

Alert Bay (Harvey); Cumshewa Inlet (Newcombe).

215*a*. Volutharpa ampullacea, Midd.

Bullia ampullacea, Midd., Mal. Ross, pt. ii, p. 179 (1849).

Fine specimens of this shell have been taken by Mr. Harvey at Alert Bay and at Shoal Bay.

216. Buccinum plectrum, Stimpson.

Rev. Northern Buccinums, Can. Nat., 1865, p. 374.

The shells previously recorded as *B. polare* and *B. percrassum* are now considered to belong to *B. plectrum* of Stimpson. Dr. Newcombe reports having taken living specimens at Victoria and Rivers Inlet.

217. BUCCINUM MOERCHIANUM, Fischer.

This appears to occur quite commonly at Alert Bay.

224*a*. CHRYSODOMUS ROSEUS, Dall.

Proc. Cal. Ac. Sc., 1877, vol. vii.

A very small species, described from the Arctic Ocean. It is recorded from Alert Bay by Newcombe in the "Museum Catalogue."

224*b*. CHRYSODOMUS EUCOSMIUS, Dall.

Proc. U. S. Nat. Mus. vol. xiv, p. 187, 1891.

This has been taken by the United States Fish Commission in many localities, from Alaska to California, in deep water. Dr. Newcombe includes it in his catalogue. It is figured in the "Proceedings of the United States National Museum," vol. xvii, pl. xxix, fig. 7.

225. CHRYSODOMUS VERKRUZENI, Kobelt.

Mr. Harvey informs me that he took three living specimens of this shell in 10 to 15 fathoms, at Port McNeil, in 1894, and that they were identified for him as above by Mr. Whiteaves. The last named naturalist is also responsible for the only other record for this species in British Columbia, as stated in my former paper.

248. EULIMA FALCATA, Cpr.

Very common at Alert Bay and at Shoal Bay (Harvey). The shells we refer to this species have been recorded in previous lists under the names *E. incurva*, Renieri, and *E. distorta*, Auct.

249. TURBONILLA TRIDENTATA, Cpr.

This species has been taken in Queen Charlotte Islands (at Cumshewa Inlet) by Dr. Newcombe, and in Departure Bay by myself.

In the "Nautilus," vol. x, p. 20, Dr. Newcombe records some shells from Cumshewa Inlet as *T. stylina*, Cpr. Dr. Carpenter considered this (with doubt) as a variety of *T. torquata*, and for my own part I am unable to separate the shells.

252*a*. MUMIOLA TENUIS, Dall.

Bull. N. H. Soc. of B. C., no. 2, p. 13, pl. i, fig. 10.

Ten to fifteen fathoms, Cumshewa Inlet, Q. C. I. (Dr. Newcombe).

Genus ODONTOSTOMIA.

Dr. Dall has kindly examined a number of my specimens. Our revised list will stand as follows:

253. ODONTOSTOMIA NUCIFORMIS, Cpr.

Common and widely distributed.

Var. AVELLANA, Cpr.

This is the shell I have formerly recorded as *O. satura*, Cpr. It is abundant at Nanaimo in 10 to 20 fathoms.

254. ODONTOSTOMIA SATURA, Cpr., and var. GOULDII, Cpr.

Vancouver Island (Carpenter).

255. ODONTOSTOMIA INFLATA, Cpr.

Very abundant on *Ostræa lurida* at Chemainus and other places (G. W. T.).

256. ODONTOSTOMIA TENUISCULPTA, Cpr.

Puget Sound (Swan). I have not yet taken this shell.

257. ODONTOSTOMIA STRAMINEA, Cpr.

Victoria and Nanaimo, not rare.

258. ODONTOSTOMIA SITKENSIS, Dall.

Queen Charlotte Islands, etc. (Whiteaves).

258*a*. ODONTOSTOMIA SUBPLANATA, Cpr.

Sooke (Macoun); Nanaimo, common (G. W. T.).

259. ODONTOSTOMIA GRAVIDA, Gould.

Sooke, Nanaimo, Comox, Alert Bay, etc., etc. Perhaps our commonest species.

259*a*. ODONTOSTOMIA CINCTA, Cpr.; (s. g. *Chrysallida*).

Thirty fathoms, near Victoria, March, 1896. (Dr. Newcombe, in "Nautilus," x, 19.)

259*b*. ODONTOSTOMIA INFLECTA, Dall; (s. g. *Miralda*).

Bull. N. H. Soc. of B. C., no. 2, p. 14.

Cumshewa Inlet, Q. C. I. (Dr. Newcombe); California (Canfield and Hemphill).

267. TRICHOTROPIS CANCELLATA, Hinds.

267*a*. TRICHOTROPIS BOREALIS, Brod. and Sby.

It is now admitted that these two forms are distinct. They occur together at Alert Bay, *T. borealis* being, however, much the rarer of the two. So far, *T. borealis* has not been found in other parts of the province, but *T. cancellata* is widely distributed and common.

266*a*. BITTIUM QUADRIFILATUM, Cpr.

Rept. Brit. Assoc., 1863, p. 655 (August, 1864).
Jour. de Conch., vol. xii, p. 143 (April, 1865).

Cumshewa Inlet, Skidegate Inlet and Dawson Harbour, Q. C. I. (Newcombe). The shell is figured in the "Proceedings of the United States National Museum," vol. xv., pl. xxi, fig. 4.

266*b*. DIALA MARMOREA, Cpr.

Rept. Brit. Assoc., 1863, p. 657 (August, 1864).

Dawson Harbour, Q. C. I. (Dr. Newcombe).

269. CÆCUM CREBRICINCTUM, Cpr.

Dredged by Dr. Newcombe in great abundance at Cumshewa Inlet in 1895.

270. BIVONIA COMPACTA, Cpr.

Not rare in Departure Bay.

271*a*. TURRITELLA ACICULA, Stimpson.

Proc. Bost. Soc. N. H., vol. iv, p. 15 (1851).

Mr. Harvey found a number of these little shells under stones at low water at Shoal Bay (mainland of British Columbia) in 1897. I think this is the first time that this species has been recorded from the Pacific coast.

276. ISAPIS FENESTRATA, Cpr.

I have found this shell, not rarely, inside the dead shells of *Tapes staminea*, and other bivalves, which I have taken from the borings of *Penitella penita* in the soft shale of Newcastle and Gabriola Islands, Nanaimo.

280*a*. RISSOINA NEWCOMBEI, Dall.

l. c., p. 14, pl. i, fig. 12.

Cumshewa Inlet, Q. C. I., in 20 fathoms (Dr. Newcombe).

287. Galerus mamillaris, Brod.

The *Galerus fastigiatus*, Gould, of former lists is now considered synonymous with the *G. mamillaris* of Broderip.

303*a*. Phasianella (Eucosmia) lurida, Dall.

l. c., no. 2, p. 15, pl. i, fig. 11.

Skidegate Channel, Q. C. I., in 20 fathoms (Newcombe).

303*b*. Phasianella pulloides, Cpr.

Dawson Harbour, Skidegate, and in shell sand from Nootka Sound (Newcombe).

320. Solariella cidaris, Cpr.

This beautiful shell appears to be common in the deep water between Nanaimo and Gabriola Island. I have obtained many specimens of the dead shell, inhabited by hermit crabs, from the lines of the dog-fish fishermen who frequent this locality. There is a good figure of the shell in the "Proceedings of the United States National Museum," xv, pl. xxii, fig. 4.

320*a*. Molleria Quadræ, Dall.

l. c., p. 15, pl. i, figs. 14 and 14*a*.

A few living and dead specimens, Cumshewa Inlet, 10 to 15 fathoms (Newcombe).

328*a*. Lepidopleurus rugatus, Cpr.

Under rocks at low water near Victoria (Newcombe). I have not detected this species myself, all my specimens of *Lepidopleurus* being apparently referable to *L. cancellatus*, Sowerby.

333. Tonicella marmorea, O. Fab.

Fine specimens of this chiton have been obtained by Mr. Harvey at Deepwater Bay. All the specimens that I have seen are readily distinguishable from *T. lineata* and *T. submarmorea*. Mr. Harvey also took four specimens at Alert Bay.

336*a*. Ischnochiton radians, Cpr.

Rocks at low water near Skidegate, 16 specimens (Newcombe).

334*a*. Trachydermon (cyanoplax) Raymondi, Pilsbry.

This seems to be our common form of *Trachydermon*, being abundant between tide-marks in all the localities I have examined. I have not succeeded in finding specimens of either *T. Hartwegii* or *T. Nuttallii*.

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